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LIGHTWAVE 5.5

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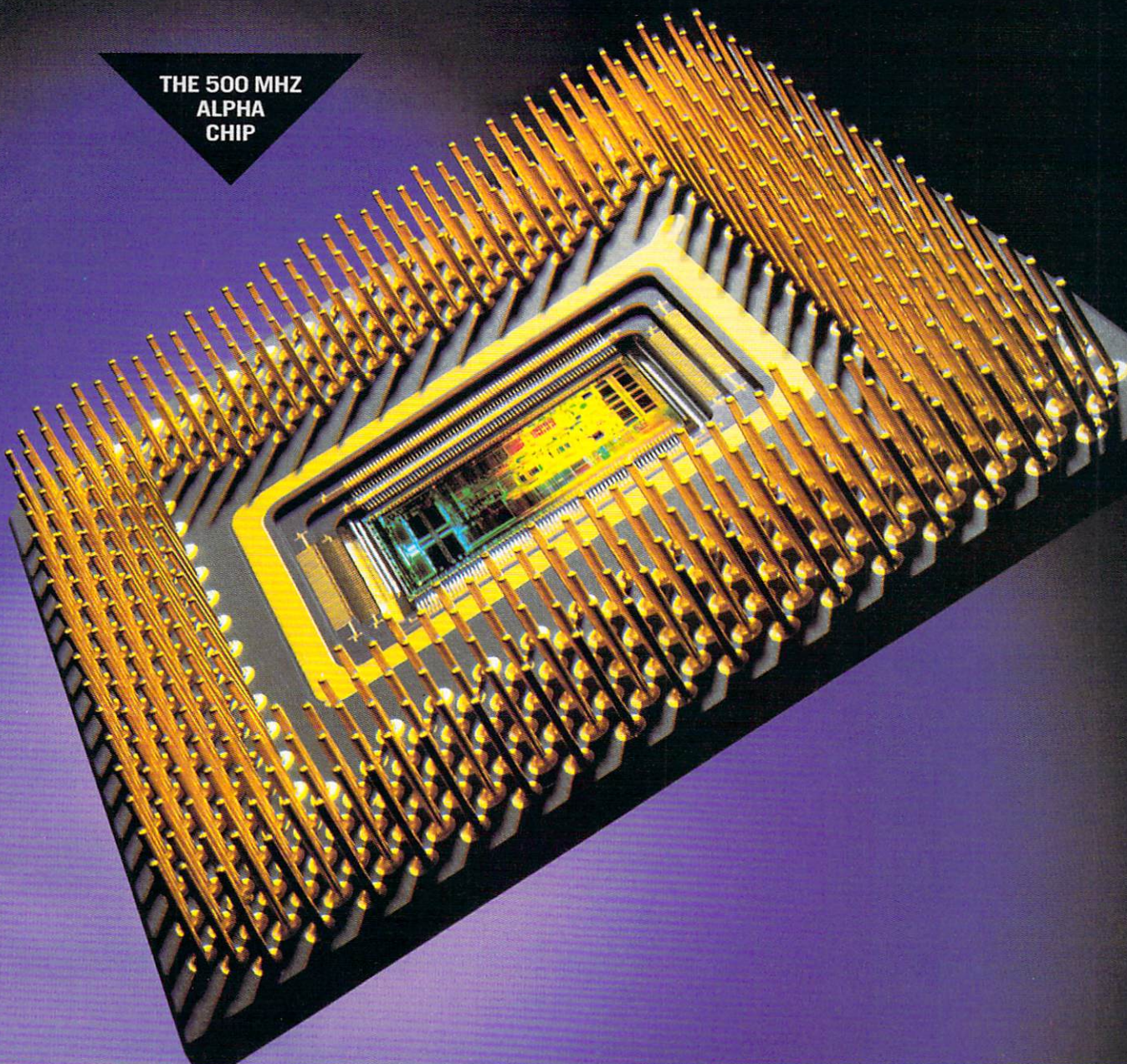
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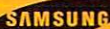
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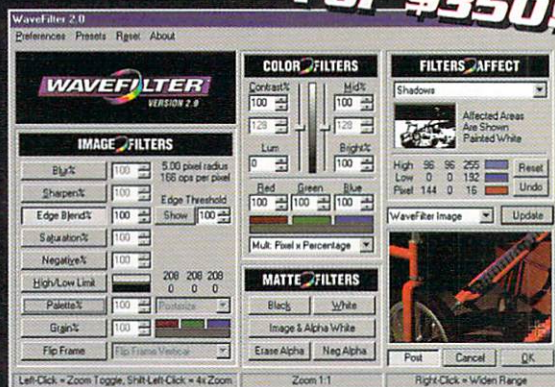
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NewTekNIQUES

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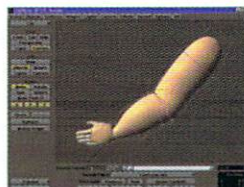
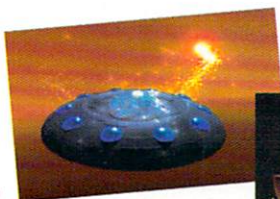
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Imaging Animator
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TekTALK

OUR EDITOR'S OPINIONS ON IMPORTANT NEWTEK ISSUES

BY JOE TRACY

Moves, staff changes,
and new products...what
does it all mean to you?

Things Are Shaking at NewTek FEEL THE RUMBLE!

When NewTek's CEO, Dwight Parscale, said at NAB that NewTek was moving to the next level fast, I thought he was speaking figuratively. He wasn't. By the time you read this, the majority of NewTek's staff will have moved from Topeka, KS, to San Antonio, TX (see "Short Takes" on page 8).

The move comes at the same time that NewTek is shipping Flyer 4.2, LightWave 3D 5.5, a new line of LightWave plug-ins, and Calibar, which recently won the coveted "NAB Editors Pick of the Show for Advancement in the Art & Science of Television Broadcast." In addition, NewTek recently won the regional Entrepreneur of the Year Award (Tim Jenison and Dwight Parscale) for Technology in Kansas. The state's announcement of the award came at the same time NewTek announced it was moving out of Kansas! NewTek now moves to the national finals in the technology category, representing Kansas even though the company will be in Texas.

To make things more complicated, NewTek has lost some key people during this transition, like Keith Goodman, who was vice president of sales and marketing. Meanwhile, the Topeka *Capital-Journal* newspaper is filled with local opinions on whether NewTek's departure is good or bad.

So what does all this mean? It means that until the dust settles, we won't be able to clearly see the results. One thing is for sure, though, and that is that the *NewTechniques* editorial staff will be busy keeping up with all the NewTek developments so that you will continue to be thoroughly informed.

NewTek Expo 1997

A few months ago, I was brought on as a major planner for NewTek Expo 1997. I was pleasantly surprised when I received the request and was basically told to "do with the Expo what you did for *NewTechniques*." So I held secret focus groups on IRC with LightWave and Toaster/Flyer users asking them what it would take to create the most awesome Expo ever. We were told, "have a

major LightWave and Toaster/Flyer awards show," so we put one together. We were told to "have a job fair with all the big animation companies represented," so we arranged one. We were also informed that "courses need big-name instructors," so we got them.

All of your ideas and suggestions were not only taken seriously, but were also implemented into this year's Expo to make it an event that will truly be "unlocking the doors to your future." The event will take place October 19 through 22 in Universal City, CA. Check out www.newtekexpo.com for the latest developments.

New WaveFX Column

I was overwhelmed by the great response to issue Number One of *NewTechniques*. Advanstar Communications is also pleased, and next year, *NewTechniques* will be published at least every other month! To help celebrate, we've added a new column! LightWave animator Tom Williamson from Computer Café (who has done effects for movies like *Sprung*) will write "WaveFX," a column dedicated to Hollywood film effects created in LightWave. His first column appears in this issue!

Be sure to drop by my *NewTechniques* Web pages at www.studiovisions.com/newtechniques. There's a special contest there that complements a tutorial in this issue on the "5-Minute UFO." There are also updates to news stories, with dozens of pages to explore. And speaking of exploring...enjoy this issue!

NewTechniques

VOLUME 1 • NUMBER 2 • Published by ADVANSTAR Communications

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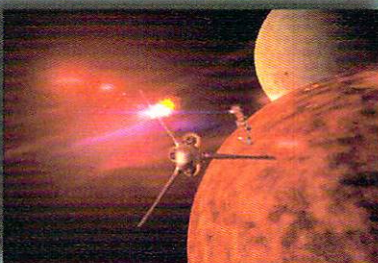
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Duracell Battery commercial - courtesy of Digital Domain.



The Titanic miniseries - courtesy of Digital Muse.



Star Trek game - courtesy of InterPlay Productions.



Babylon 5 - courtesy of Foundation Imaging.

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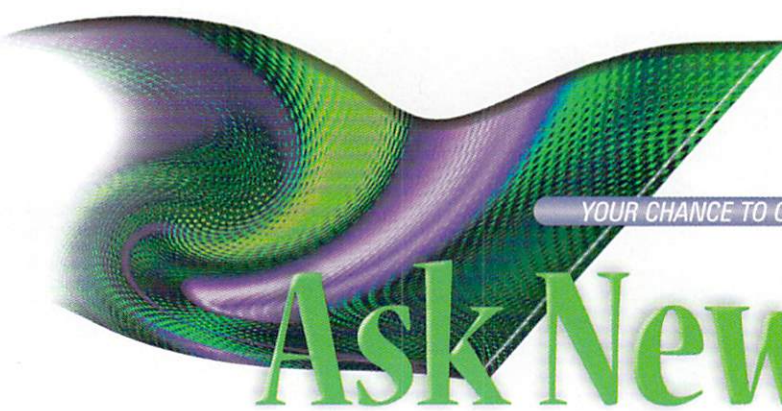
*\$195.00 USD Intel version, \$250.00 USD DEC Alpha, Macintosh, Sun, and SGI versions of all Dynamic Realities' software will be available by November 1997. LightWave logo used with permission. All products mentioned are trademarks of their respective companies. © 1997 Dynamic Realities. All rights reserved.

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Q. *I heard that NewTek is moving to San Antonio, TX, but that the LightWave 3D development team is moving to San Francisco, CA. If this is true, why? Wouldn't it be better if the whole company moved to San Francisco?*

A. NewTek is opening a LightWave 3D development and training office in San Francisco to bring it closer to the high technology and multimedia environment throughout the areas in and around Silicon Valley. This will give NewTek the advantage of proximity to its platform vendors, as well as to the multimedia talent and business environment of Hollywood and surrounding areas.

Julian Critchfield, vice president of research and development, recently said: "Because many LightWave 3D customers in the Bay area use the software to create special effects for major motion pictures, television shows, and familiar commercials, we are constantly soliciting them for feedback and incorporating their suggestions into our software to make it more functional, user-friendly, and

productive. Being closer to where our users actually create their work will better facilitate that interchange and dialog process."

Both the new Texas and California offices will include training facilities for NewTek's dealers and distributors.

Q. *What is this new Calibar product I've heard about?*

A. Calibar is a pen-size, battery-operated NTSC test signal generator designed for both studio and field operations, and is now shipping in volume. The innovative NTSC test pattern and black burst generator is aimed at broadcast engineers, large and small television production facilities, video post houses, and video enthusiasts of all kinds. With its combination of low cost and full-featured operation, Calibar is expected to revolutionize the practice of video signal calibration.

Calibar can be used to troubleshoot gear in the studio or in the field. In addition, it can be used to calibrate video monitors for proper brightness and color rendition. It connects easily to any type of video equipment, and it is simple to operate.

Q. *Is NewTek ever going to release the Film Grain plug-in?*

A. One of our big SIGGRAPH announcements is a new product line of plug-ins, including the much requested Film Grain plug-in. The Film Grain plug-in takes out film grain in a scene and then adds an overall grain to the animated object and the background scenery.

(Editor's Note: See the "Short Takes" column on page 8 for more information).

Q. *Is it true that you've stopped LightWave development on the Amiga platform?*

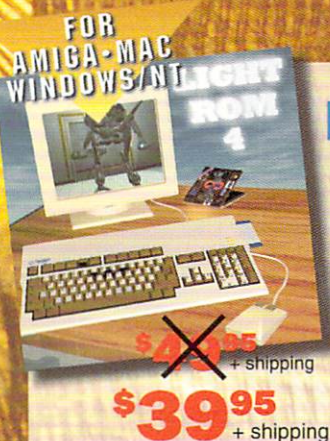
A. We have no plans for further LightWave development on Amiga. We are always there to support our customers and will keep a watchful eye on the market to see what develops over the coming months. If many new things develop with Amiga then we will revisit the decision at that time.

Q. *Is it true that you have had meetings with Gateway 2000 in regards to their acquisition of the Amiga? If so, what became of those meetings?*

A. We had some initial discussions with them, but at this point there is no news to report.

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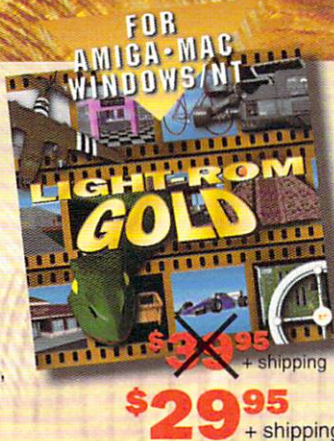
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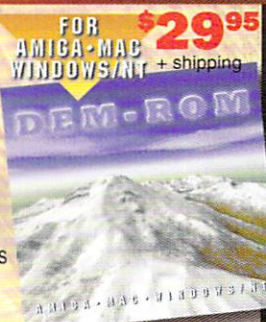
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NewTek Entrepreneurs Win Regional Award

NewTek's Tim Jenison and Dwight Parscale were honored in late June by being named Entrepreneurs of the Year in the area of technology for the State of Kansas.

The national program, sponsored by the Entrepreneur of the Year Institute, *USA Today*, NASDAQ, and several other companies, was founded by Ernst & Young to recognize entrepreneurs who have demonstrated extraordinary success in their field.

Winning the award moves Jenison and Parscale to the national finals where the overall winner will be featured in *USA Today* along with other finalists.

NEWS OF NOTE FROM THE WORLD OF NEWTEK AND BEYOND

ShortTakes

LIGHTWAVE 3D OPENS

MEN IN BLACK

It's almost unheard of for an audience, especially one made up of press, to applaud after the opening credits in a movie. Yet it recently happened at the premiere press screening of *Men In Black*, in late June, at the close of the two-and-a-half minute LightWave 3D opening segment created by the animation specialists at Autumn Light Entertainment.

Autumn Light Entertainment, headed by Brad Carvey, Joe Conti, and Scott Helgesen, did the entire segment featuring the adventures of a dragonfly using eight 500MHz DEC Alphas to render the Windows NT LightWave creation.

Rendering the complete sequence at film resolution took five days. Autumn Light's Carlos Yambao did most of the modeling, aided by Rick Helgesen. Joe Conti, the project manager, and his brother Paul did most of the animating, while the majority of texturing was done by Jesse Daves. Carvey and Helgesen served as

advisors, while working on a non-related new hardware/software program called MyTV.

The LightWave sequence opens when a gnat enjoying the night sky is devoured by a dragonfly with giant green eyes. As we watch over its shoulder, the dragonfly takes us on a twisting tour of the desert and displays the skills of an aerobatic barnstormer as it dodges 18-wheeler death. Just as we are breathing easy, our winged Houdini loops its final loop into the great windshield of life. LightWave and Autumn Light's talented artists set the mood for the rest of the movie with this sardonic food chain morality play.

According to Carvey, the process to create this sequence went as follows:

- 1 Autumn Light received background plates by Open Films. Alan Munro of Open Films, who directed the opening sequence, contracted with one company to produce the miniature sets, another company, VCE (founded by Peter Kuran after finishing work as animation supervisor for Industrial Light & Magic on George Lucas' *The Empire Strikes Back*) to do film scanning and recording, and Autumn Light Entertainment for the modeling, compositing, and animation in LightWave.

- 2 Autumn Light received the film resolution digital images on hard drives. They blurred the background images to create depth-of-field, then composited the dragonfly into those frames. The entire sequence was rendered out to four 9GB drives in film resolution. The opening sequence took up about 32GB of hard drive space.

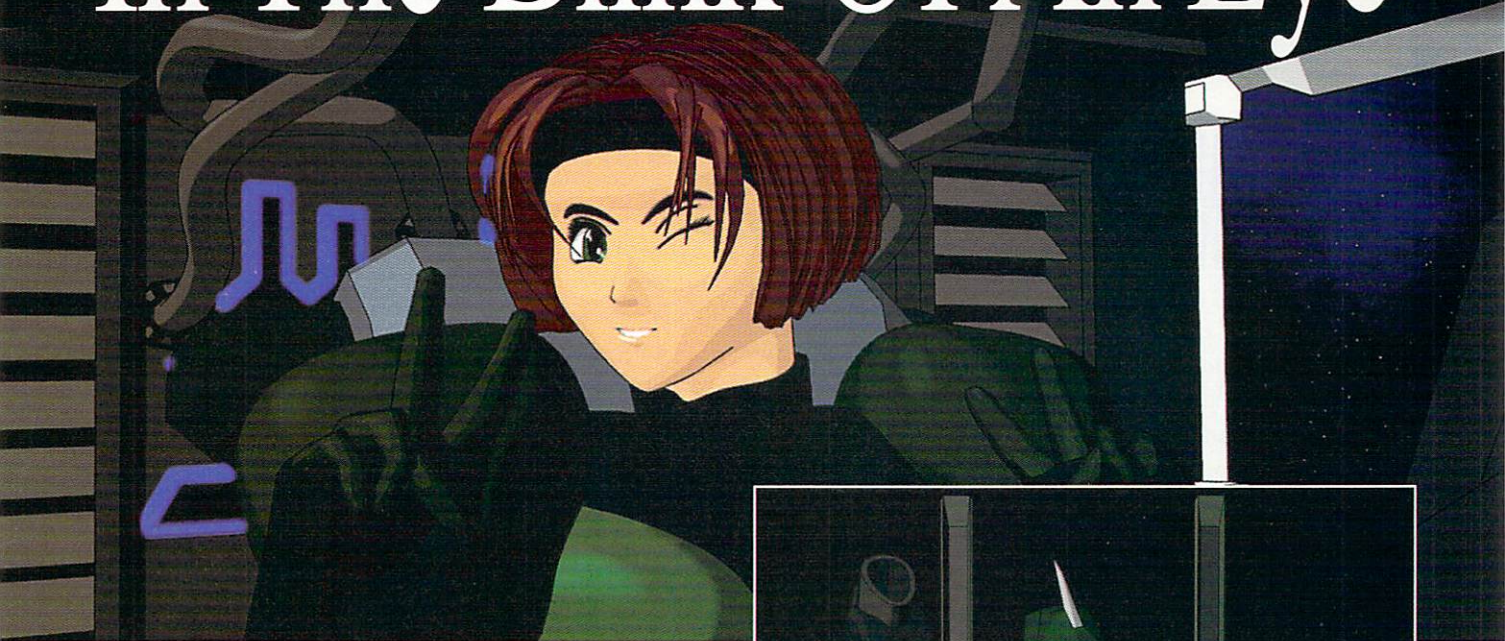
- 3 Autumn Light sent the project to VCE on the hard drives, which then transferred the images to film. Barry Sonnenfeld, director of *Men In Black*, then reviewed the film footage and requested changes. The process was repeated until the sequence was perfect.

"Working with the veteran movie makers at Open Films was an incredible experience," Carvey said. "The animation team at Autumn Light has proven itself and is already taking on larger film projects. As Joe would say, 'This is GREAT!' " This isn't Autumn Light's first use of LightWave in the film industry. It also did some LightWave sequences for last year's *Nixon* and *Courage Under Fire* films. Visit Autumn Light at www.autumnlight.com.



The LightWave-created dragonfly before its fatal collision with a windshield.

3D to 2D In The Blink Of An Eye

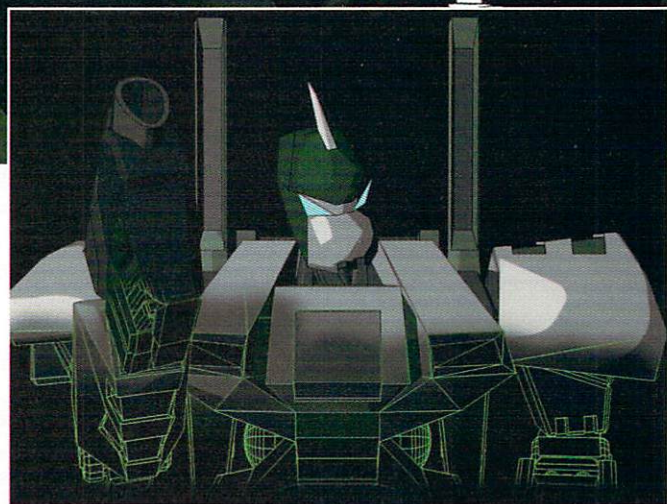


"LightWave 3D *allows me to achieve a highly stylized look to my animations with relative ease. The cel shader is simple to use yet incredibly powerful. It can not be beat."*

Robert Baldwin
Dark Orb Digital

LightWave 3D is well known by industry professionals for its rendering speed, ease-of-use, multi-platform functionality and image quality, to name a few. But what many don't know is that LightWave 3D's Cel Shader gives users the ability to create fantastic 2D images. Think of the power of a 3D program that can generate a photorealistic image and, with the click of a button, create an image that looks like it has been hand drawn. What's more, the Cel Shader can paint a three-dimensional object so it looks like a cartoon, and then trace around objects and contour lines with variable color and thickness. It even allows you to merge conventional 2D images with 3D animations. And that's just for starters.

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HOLLYWOOD ROUNDUP

LightWave 3D continues to take Hollywood by storm, now spreading into the film industry. With a two-and-a-half-minute creation at the beginning of *Men In Black* (Autumn Light) and the upcoming *Titanic* (Digital Domain), LightWave and the companies and artists that use it are receiving even greater recognition.

Trimark Pictures' *The Warrior of Waverly Street*, originally scheduled for theatrical release in April, has been moved to late summer. Computer Cafe, which did LightWave shots for *The Warrior of Waverly Street*, also were the wizards behind some of the *Sprung* effects (see "WaveFX"). In addition, Computer Cafe has a hand in Live Entertainment's *Wishmaster* and Disney's *Flubber*. The Web site for Computer Cafe, www.computercafe.com, was recently enhanced to show more of the company's work.

If you are one of the thousands of people who flocked to see *Batman and Robin* the first weekend it opened, you might remember the James Bond trailer for *Tomorrow Never Dies*. LightWave effects in the Bond trailer were supplied by Digital Muse. *The Fairy Tale* theatrical trailer, by Digital Muse, is also LightWave-enhanced. The Fox premiere of *Roar* on July 14 showed some hard-to-find LightWave by Digital Muse that mostly consisted of things like set enhancements.

If you're a "Xena" and "Hercules" fan, you might know about the new Universal Studios Florida "Wizards of the Screen" attraction. Digital Muse is responsible for the LightWave effects in this one, too. You can check out other Digital Muse LightWave projects at www.d muse.com.

Foundation Imaging is keeping busy with several projects. Check out the feature in this issue and the sidebar. OCS, also in this issue's feature, is finishing up work on a cool Casper project accomplished with LightWave.

Kudos to the gang at Will Vinton Studios who are almost to the 30 mark in the popular LightWave-generated M&M commercials. The M&M characters seem so lifelike now that one wonders when they'll star in their own movie!

Amiga Sold!

The Amiga technology is officially owned by computer giant Gateway 2000, which says it plans on supporting and expanding the Amiga platform and market.

Gateway 2000 opened up a new subsidiary for the platform called "Amiga International."

For more information, see this issue's "Surf Report" column.

NewTek Moves to Texas

NewTek, consolidating its Topeka, KS, and Boulder, CO, operations, is moving to San Antonio, TX. According to Steve Herrmann, NewTek's director of marketing communications, the transition will take place in stages. Research and Development will be the first team moved, by mid-July; Sales and Marketing from Boulder plans an early August transfer; and by Sept. 1, Operations, Customer Service, Accounting, and Tech Support will be fully operational.

The area between San Antonio and Austin has been dubbed "Silicon Hills" because of the burgeoning population of computer-related businesses. The pool of highly qualified computer personnel in the area was one of the draws for NewTek. Says Dwight Parscale, president and CEO of NewTek, "The move will enable us to deliver enhanced products and services more quickly, and will allow us to augment our inside sales, customer service, and technical support groups with extremely qualified individuals."

Herrmann said that Tech Support should be seamless because the Topeka telephone numbers will roll over into the Texas operation overnight and will continue to be used until the new San Antonio numbers are well publicized.

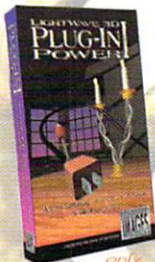
Missing in the San Antonio move are the LightWave developers who are relocating to San Francisco, CA, to be closer to their high-end visual effects clients. Training centers are planned for both San Antonio and San Francisco by the end of the year. The centers, outfitted with powerful workstations, will offer day classes on LightWave to dealers and users.

Herrmann also said that NewTek will publish a technical newsletter that should debut after the SIGGRAPH convention this month.

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UNLOCKING THE DOORS TO YOUR FUTURE

NewTek Expo 1997

Animation, Graphics, Video

The success of this year's "Unlocking The Doors to Your Future" Expo, October 19 through 22 at the Universal City Hilton in Los Angeles, CA, will be attributed directly to NewTek product users. The NewTek Expo 1997 planning team held a number of Internet focus groups the past three months to determine from users and potential attendees what it would take to create the most awesome NewTek Expo event ever. The users spoke and the committee listened. This year's plans include:

- A major event each night of the Expo.
- High-profile course teachers.
- An awards ceremony to honor work by LightWave 3D, Toaster, and Flyer users.
- A job fair with high-profile LightWave companies represented.
- A demonstration stage for exhibitors.
- A special course for exhibitors to introduce brand new products.
- Reports from the major LightWave production companies.
- A sneak peek of exhibits the evening before they officially open.
- A panel on how to break into Hollywood animation.
- Special sessions with themes of marketing, building demo videos, and character animation.
- Increased networking opportunities.
- A free demo video station where people can show their work to others.

- A chance to have a Hollywood professional review your demo video.
- A dedicated Web site just on the Expo (www.newtekexpo.com).

"The users spoke and we listened," says *NewTekniques* Editor Joe Tracy, who is a major planner of the event. "The only way this Expo can be the best ever is if we implement the ideas people suggest. Two of the biggest ideas were the major awards show and the job fair. We got them both."

Some of the high-profile LightWave course teachers include Scott Wheeler (Area 51), Tom Williamson (Computer Cafe), part of the team that created the Casper prequel (OCS' Ken Wilder, Susan Ishida, and Joe Clasen), and LightWave experts Thomas Fedoryak and Patrik Beck. NewTek's Brad Peebler, who scored high marks for his past courses, also will be teaching.

On the Toaster/Flyer end, course instructors include Emmy Award winner Michael "Aussie" Holten, Paul Lara, Ryan Johnson, and Tracy.

The most expensive part of the Expo will be the major awards show, currently scheduled for the Beetlejuice Theater inside Universal Studios. The show will be hosted by Mojo and will include entertainment acts, awards, and a special LightWave achievement presentation and award to Ron Thornton.

For more information on this year's NewTek Expo event, check out the Web site, or to register call (800) 331-5706.

NewTek Releases Plug-in Line!

One of NewTek's main SIGGRAPH surprises is the release of a new line of plug-ins for LightWave users including the much anticipated Film Grain! At press time, prices were unavailable. NewTek's five plug-in releases are:

Film Grain: This plug-in will take out film grain in a scene and then add an overall grain to the animated object and background scenery. Similar processes were used in movies like *Forest Gump*.

Cyclist: This plug-in allows the speeding up of very complicated multiple part animations. It gives you a single control over all the objects. An example is making the wheels of a car turn when it moves.

Follower: This plug-in allows for instructions to make one item follow another. An example would be a complete row of train cars following each other. It cuts down on animation time.

Skytracer: This is an environmental plug-in shader for the creation of cool sunset backgrounds.

Serpent: This plug-in makes fluid and organic objects conform to paths like a snake slithering down a path. You simply set the path and the object will conform to it.

For more information on the release of these plug-ins, check out www.newtek.com and www.studiovisions.com/newtektechniques.

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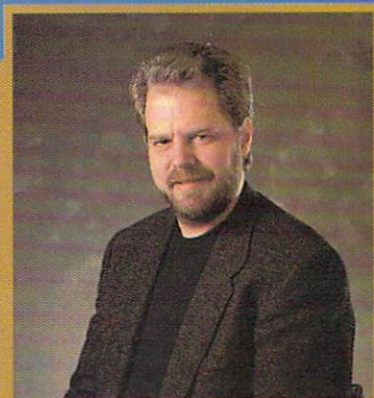
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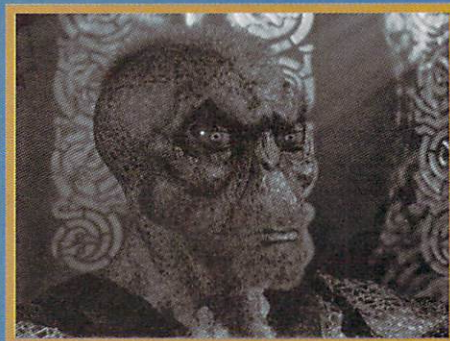
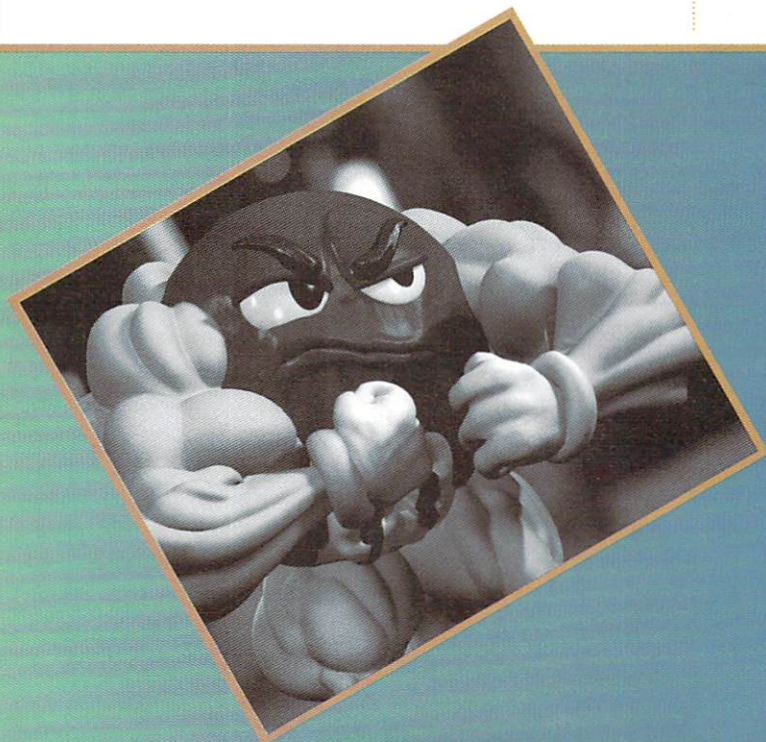
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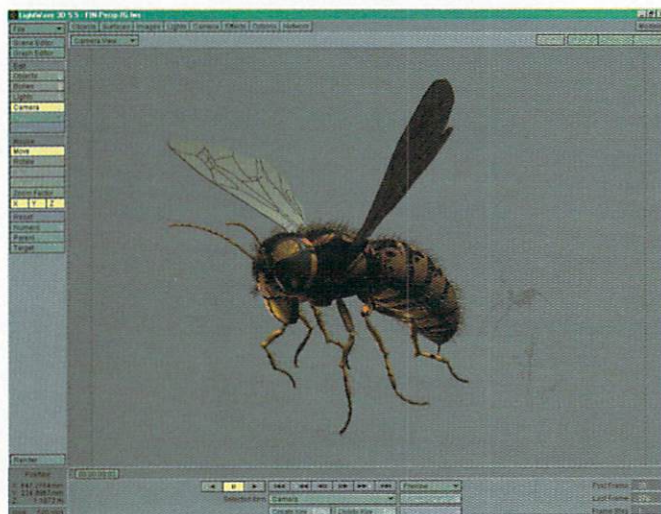
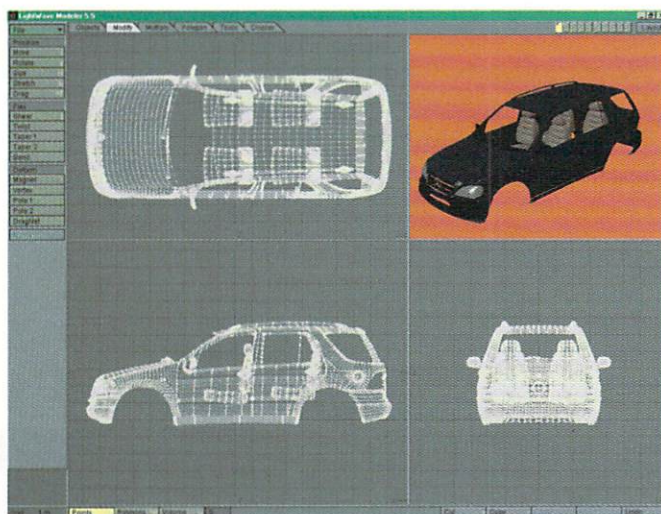
WAVES

A new interface, new tools, and new plug-ins make this an upgrade to consider.

What's New, What's Improved LIGHTWAVE 5.5 IS HERE!

BY JOHN GROSS

The new Modeler interface (top) and Layout's new look (bottom) in LightWave 5.5.



The big news in the LightWave 3D arena is, of course, LightWave 5.5. First shown to the public at NAB in April of this year, 5.5 promises to be a new and exciting update to good ol' LightWave. The first thing you'll notice is the new look to the interface. Gone is the old "Amiga" look and feel. At NAB, I heard many people remarking on how much better the interface was. I've seen a few reviews that comment on the same thing. I have a funny feeling that if all that was new about 5.5 was the fact that the interface had Windows-like colors, but all the buttons were in the exact same place and did the same things, people would still say what a vast improvement it was.

Lucky for us, that is not all that is new. Let's take a look at some of the more impressive features.

Interface

Along with the new colors, which by the way are user definable, you'll also find non-modal windows. These are things that make you wonder how you ever did without them. All of the Layout panels and Modeler requesters will now stay up and you can move them wherever you want. Additionally, making changes to something in a panel will update the object(s) behind. For instance, changing a motion path in the motion graph of an

object will change the object's motion in the Layout window. You're best off if you use a large monitor so you can make Layout or Modeler small enough to move the panels off to the side.

You'll notice Layout has some new buttons for playback. To the left are some forward and reverse playback buttons that will play the scene as fast as possible without making a preview. This is really a handy feature. Add buttons for adding and clearing bones/objects/lights, new view movement/rotation controls, and an Undo feature (anybody happy about that?) and the main Layout interface is nicely rounded out.

Among the other Layout panels, you'll find new "tabs" to help separate features. The Surfaces panel is tabbed into two categories—Basic parameters and Advanced Options. In the Objects panel, the tabs separate Deformations and Appearance Options, which actually can create more mouse clicks as Morph controls and Object Dissolve are separated. Switching tabs here can get a bit tedious when you have a lot of morphs to set up.

New to 5.5 Layout is a Render panel that is located where the old Render button used to reside. There aren't really any new features here, but many features have been removed from other panels and placed here. All together are the image saving, rendering node, and First/Last Frame fields, as well as the Data Overlay. There is a checkbox for Automatic Frame Advance here and you will get burned by forgetting to select it. The good news is that you can now default it to be selected by default in your config file.

Modeler's interface shares the same look, but one of the greatest features shows you the keyboard shortcut right on the buttons, and they are customizable! You can change shortcuts to anything you want and add a shortcut to features that currently don't have one assigned. Another nice harkening-back-to-the-Amiga-days feature provides buttons in both Layout and Modeler to jump you back and forth between applications. They also will start the chosen application if it is not already running. One thing to keep in mind about popping back and forth is that you can't minimize either application because neither will maximize when the appropriate button is pressed. This is hardly a problem, however, and only bears mentioning so you'll understand why LightWave or Modeler aren't popping up when you think they should.

Another nice feature to Modeler's new interface (especially for beginners) is the fact that tool buttons now ghost out when you can't use them. For instance, if you have nothing in a layer, you can't bevel anything, and therefore, the Bevel tool is ghosted. New layer buttons and a centralized File pop-up for loading and saving objects and layers helps complete the new look to Modeler.

One final thing added to Layout's interface is the ability to perform math functions in

Modeler's interface shares the same look, but one of the greatest new features shows you the keyboard shortcut right on the buttons, and they are customizable. You can change shortcuts to anything you want and add a shortcut to features that currently don't have one assigned.

numeric requesters just like Modeler allows. Additionally, Layout now supports different measurement units, as does Modeler.

New features

Modeler has some exciting new tools. The new Knife tool lets you slice through objects and create new polygons and points. It's exactly like creating geometry in a background layer and then using the Slice command to create new geometry, but much easier.

DragNet functions much like the Drag tool, but instead of dragging single points, it will drag points based on an area of influence selected with the right mouse button. Points directly below the cursor will move with the mouse, but points further out will be pulled along in a magnetic way. The points at the edge of the influence range move a little while those in the center move more with the mouse. When I use this tool it feels very much like working with modeling clay.

Smooth Scale works like Smooth shift, but actually scales an object along the surface normals. This is a great tool for creating objects that need to nest inside others. If you've ever tried to scale an object with compound curves so it fits exactly inside a "shell," you'll really appreciate this tool.

Separate background images for X, Y, and Z with adjustable pixel aspects plus a user-defined backdrop color help improve Modeler's display functions.

You can now use MetaNURBS modeling with triangular or quadrangular polygons. All of the Flex tools (Bend, Shear, Taper, and

The new Steamer plug-in included with LightWave 5.5 allows for volumetric lighting effects.



Twist) now give visual feedback as to the direction of the effect as well as to the amount of ease-in/out. Both are interactively adjustable, as well.

As often seems to be the case, Layout seems to sport more new features than Modeler. Here are some of the new features found in Layout for 5.5:

Surfaces

LightWave's OpenGL now supports textures. For instance, you can see an image map applied to an object's surfaces. Additionally, and some would say finally, LightWave's textures now support reference objects! Add a null as a reference and you can "lock" a texture to the null. Move, rotate, or scale a null (and key frame it) and *voilà*: animatable textures!

The glow effect is applied on a per surface basis allowing you to have different glow amounts per surface. Additionally, LightWave supports a few different alpha channel options. A surface can have an alpha channel based upon the surface opacity (the default option) or a constant, user-defined alpha value regardless of how opaque it is. Of course, there is the old "Shadow alpha" option, which is now called Shadow Density.

Lights

5.5 introduces two new types of lights—Linear and Area. Linear lights are like fluorescent tubes. You can change the length of them and they send out light like a Tylenol capsule shape. Area lights are squares of light that can be used to fill a door or window or place over a car. Both types of light will ray trace with soft shadows.

(continued on next page)

WAVES

(continued from page 17)

IK

IK is much more robust in 5.5. Not only is it faster and more accurate, but it also boasts some new features. Match Goal Orientation allows an object to always match the way the goal is rotated. This is useful for helping to keep feet from pushing through floors, for instance. Rotational joint stiffness allows for more realistic rotations of bones/objects. Also, since different ends of joints can have different goals, stiffness values allow for the "weighting" of goal influences.

Plug-ins

Here's one of the big areas where you get your bang for the buck! LightWave 5.5 includes some really nice new plug-ins. Steamer and Sky Tracer by Grégory Duquesne allow for volumetric lighting (light cones), dust, cloud, and atmospheric effects. Particle Storm Lite by Dynamic Realities is a scaled-down version of the popular Particle Storm plug-in and Morph Gizmo by Dan Milling and Fori Owurowa allows for real-time feedback of morphing groups. Morph Gizmo makes character animation and lip-syncing a

breeze. Deformer by Arnie Cachelin allows for animatable "Modeler" tools in Layout. For instance, you can bend, twist, or taper an object over time.

Well, that's a lot of new stuff covered, but it's not all. Multithreaded rendering, the ability to use seconds or SMPTE time code instead of frame counts, and the ability to "draw" bones all add to the list that makes LightWave 5.5 a must-have.

How much does it cost? Buying LightWave 5.5 new will run you \$1,995 for Intel/Alpha/Mac and \$2,995 for SGI/SUN. Upgrading from 5.0 to 5.5 is \$495 for Intel/Alpha/Mac and \$995 for SGI. However, if you paid the full \$3,995

price for the SGI 5.0 version, you are entitled to a free upgrade to 5.5. For Intel platforms, LightWave 5.5 supports both Windows NT and Windows 95, but not Windows 3.1 or earlier. One sad note for Amiga and MIPS users, there will be no more version of LightWave for these platforms after 5.0.

So, should you get this new upgrade? I believe that the new plug-ins included with LightWave are worth the price of the upgrade alone. Now add in all the other cool new features and you're looking at a damn good deal.

John Gross is co-owner of Digital Muse and can be reached at john@dmuse.com

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Circle #211

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AUTHOR & READER SUBMITTED TIPS & TECHNIQUES

BY JOHN JACKMAN

Panning and Zooming Images

You're doing a production that involves a lot of stills. The idea of placing static framestores one after the other, even with fancy transitions, just seems a little stale. How do you add motion to those stills? Since most of us can't afford a \$25,000 motion-controlled rostrum stand like the networks use, the most common solution has been to try pans and zooms by hand with a camera. The results are, well, hit and miss. Here are two software solutions that will give results equal to anything the networks can do. You'll need access to a good color scanner.

First, you might not have realized this, but you already own a motion-controlled digital camera—in LightWave 3D! The procedure is simple. Using a good color scanner, scan the photos or maps you wish to pan at 150dpi or 300dpi. Remember, your Toaster's screen resolution is about 72dpi; you'll need to vary the resolution of the scan depending on how closely you will be zooming into the large bitmap. For the highest quality results, you don't ever want to zoom in closer than a 1:1 pixel ratio, or the end result will be blocky. Now, create a simple plane in Modeler (or use LightWave's RegImage object).

Import this plane into Layout and assign your large scan as the surface color. Light the plane with the single default point light source. You don't want any effects or shadows. It is tremendously important to scale the plane so that its overall aspect ratio is as close to the original photo as possible—otherwise you'll end up with tall skinny people or fat midgets. Position the camera at the starting point of your pan or zoom (Figure 1). Because you can't see the bitmap directly, you might have to do a test render on the beginning and ending frames to make sure they are framed properly. Now, set the key frames and camera motion any way you want. Once the animation is set up, hit render, have a cup of coffee, and *voilà*: the fanciest, smoothest pans and zooms!

There's another software solution to this too, using ImageFX 2.6.

See my technique on how to do this at Editor Joe Tracy's *NewTekniques* Web site (www.studiovisions.com/newtekniques).

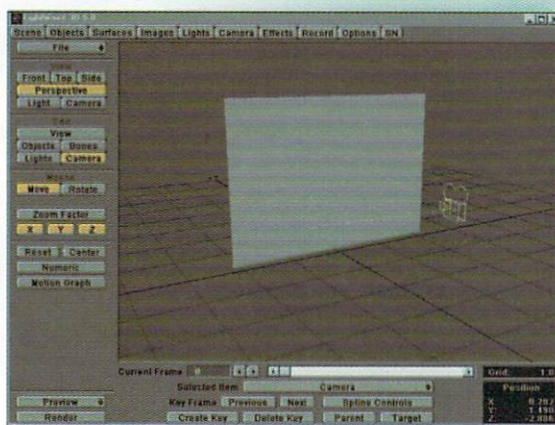


Figure 1

Create a VoidAll Icon BY DON NELSON

Here are seven steps to make a VoidAll icon on the Workbench (I used DirOpus to do the copies and rename).

1. The Voidall program is in the Newtek/programs/flyer_support/c/ drawer. Copy (not move) an Executable .info file to this drawer. I used the genlock.info file in newtek/programs/utilities drawer.
2. Rename the copy, genlock.info to VoidAll.info.
3. Copy both the VoidAll and Voidall.info files to the newtek/programs/utilities drawer. It's a drawer you can get to on the Workbench.
4. Go to the Workbench and open the newtek/programs/utilities window.
5. Click once on the VoidAll icon to select it.
6. Click and hold down on the Icons bar at the top of the workbench and pull down to the leave out option. Release.
7. The VoidAll icon is now on the Workbench, and will stay there until you use the "put away" option. Close all the windows and start the Flyer. Use Left Amiga + M to toggle back and forth to the Workbench <> Flyer screens. Run VoidAll by double clicking on its icon.

Fake Reflections

BY ROGER VETRUBA

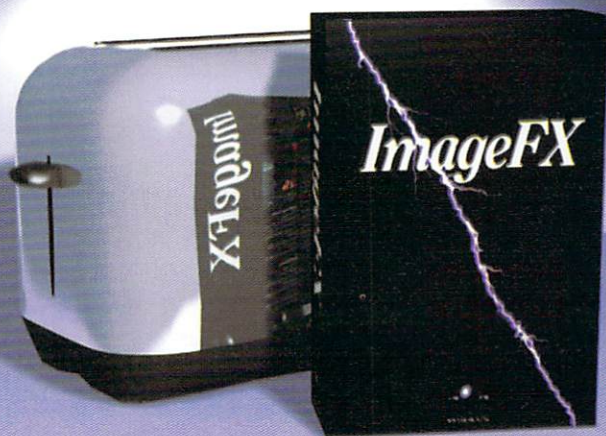
Need to fake reflections on a floor or simple object? Render frame 0 and save it as your destination sequence (tip000.tga), then begin rendering with the {tip} sequence as a reflection image.

The animation will call on itself, one frame previous. The one-frame lag won't be noticed unless the motion is extremely pronounced. This could be helped with pictures as well.

If you have a LightWave 3D, Video Toaster, or Video Toaster Flyer tip or technique that you think other readers will benefit from, then send it to *NewTekniques* for publication consideration.

If the tip is useful, and wasn't already submitted or planned for use by a columnist, then your tip will be published and you will be given credit, along with a \$35 check.

Send tips to "Tekniques," *NewTekniques* magazine, 1038 W. Harvard Blvd., Roseburg, OR 97470, or email your technique to jtracy@main.rosenet.net.



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Circle #212

Solving 'No Audio Drive Found' Messages

BY MIKE
NANN

Many Flyer users have had difficulty with audio split edits, getting the error message "No Audio Drive Found" when playing a project that used the Flyer's Auto-Insert Edit function. The error occurs even when the drives have been allowed to fully spin up before starting the Flyer. In many of these cases, this can be corrected by changing the SCSI ID number of the audio drive from 0 to a higher number. This frequently solves the problems some users have with Quantum

Fireball audio drives as well as a few others.

Changing the SCSI ID of the drive is a simple matter of changing some jumpers on the drive. If you're not comfortable with taking your drive out of the system, you should get your dealer to help you with these steps. You'll need the diagram showing which jumpers on the drive represent the SCSI ID. These will be in the documentation that came with the drive, and might also be on a label affixed to the drive itself. You'll also need a

couple of jumpers. Extra jumpers are often included with the drives, or your dealer should be able to provide you with them.

1. Set the ID of the drive to a higher number. I use 6, and other users have had success with 4 and 5. Make sure that if you have any other devices on the same SCSI chain (such as a tape drive, CD-ROM drive, or additional audio drives) that you don't select an ID already in use. Install the drive back

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into the system, and start your system up.

Don't be alarmed that your audio drive doesn't appear on the Workbench—one more step is needed to complete the change.

2. From the Workbench, open your system boot drive and go into the drawer STORAGE/DOS-DRIVERS (if you can't see the STORAGE or DEVS drawers on your boot drive, make sure you have "Show All Files" selected in the Workbench pull-down menus). Locate the file FCx in

this drawer, where <x> is the new ID number you set the audio drive to. For example, if you chose SCSI ID 6, the file you need is FC6. Drag this file into the DEVS/DOSDRIVERS directory, also on the boot drive.

While you're at it, you can drag FC0 from DEVS/DOSDRIVERS to STORAGE/DOSDRIVERS, although this step isn't necessary.

Now reboot the system, and your audio drive should re-appear, and audio split edits should function as intended!

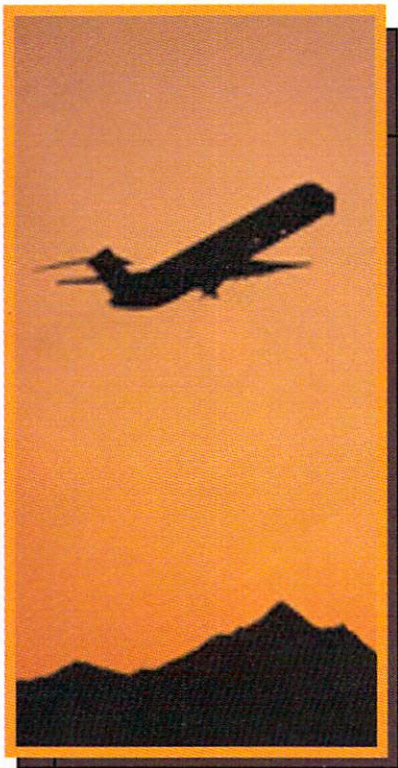
Stutter Solution

BY KYLE BURDETTE

Digital Flyer effects, among other things, can cause your video to stutter during cuts and other transitions. There is a way to eliminate all video stutter in your project, even if it is full of digital "on" and/or "off" transition effects.

Go to the CG and save a blank screen as a key page. Use this "Blank Key" in your project to overlap every cut transition. For example, imagine a project made of video clips A through I with digital effects after clips A and E. Set the first Blank Key to come up three seconds into clip B, and go away about two to three seconds before clip E ends. This covers the transitions between clips B-C, C-D, and D-E, and will eliminate all stuttering. Repeat the process after clip F and throughout the entire project for the same results.

You can use this technique for digital effects, slow drives, or anything else that causes video to stutter.



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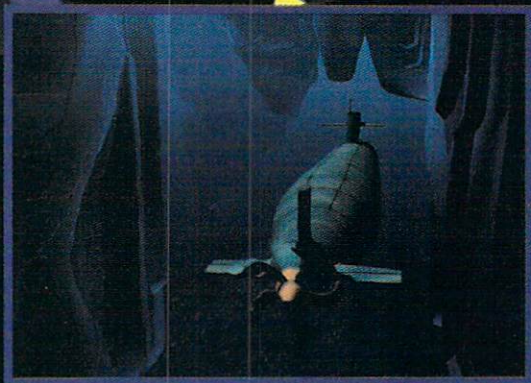
THE TALE OF TWO CARTOONS

BY
DICK DE JONG
AND MOLLY
DINKINS

Foundation Imaging combines 2D with LightWave 3D in *Batman Vs. Mr. Freeze: SubZero*, while DCS/Freeze Frame/Pixel Magic mixes live action with LightWave 3D-generated ghost animation in *Casper: A Spirited Beginning*

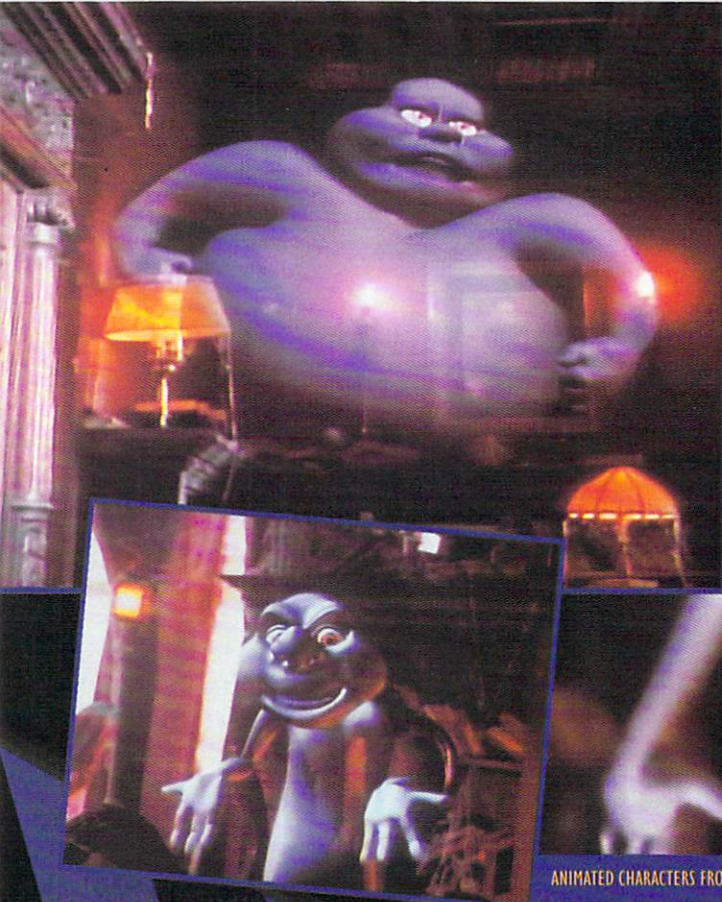
2D and 3D scenes created in LightWave for "Batman Vs. Mr. Freeze: SubZero"

More than a half-century ago, two very different cartoon characters debuted to two very disparate audiences. Batman, the moody vigilante, arrived the year Hitler invaded Austria; and Casper, the friendly ghost, appeared as America celebrated the end of World War II. The two characters have survived years of uncountable incarnations in comic books, movies, books, television, and action figure toys. This year, the caped crusader and the shy spook make yet another appearance, this time in two new animated features *Batman Vs. Mr. Freeze: SubZero* and *Casper: A Spirited Beginning*.

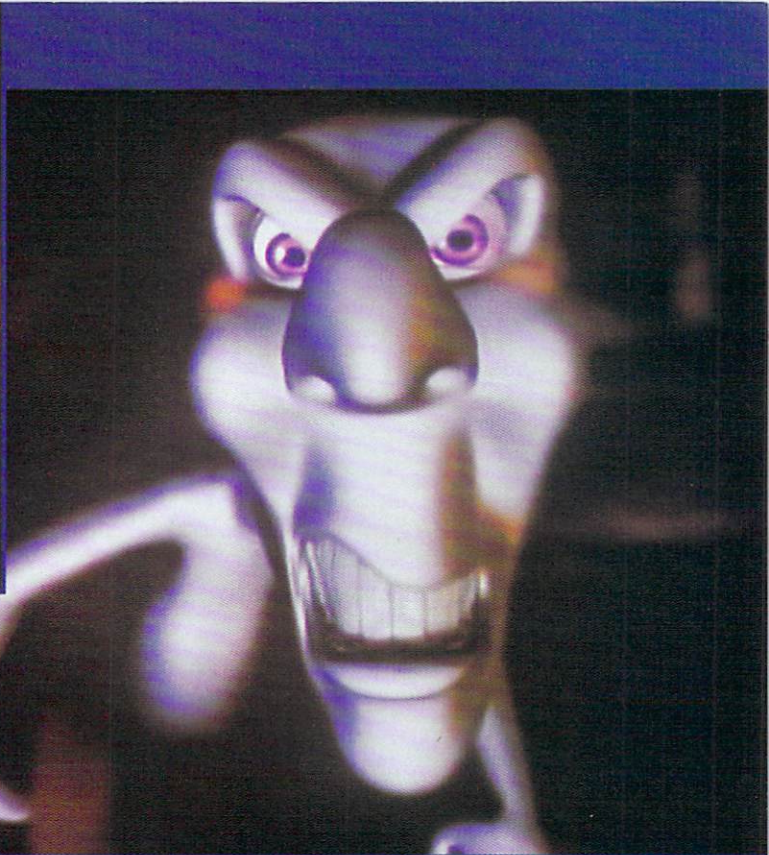


Above right:
The Ghostly Trio of
Uncles—Stinkie,
Fatso, and Stretch,
from "Casper: A
Spirited Beginning"

SCENES FROM BATMAN VS. MR. FREEZE: SUBZERO. COPYRIGHT 1997 BY WARNER BROS. ALL RIGHTS RESERVED.



ANIMATED CHARACTERS FROM *CASPER: A SPIRITED BEGINNING* COPYRIGHT 1997 BY HARVEY ENTERTAINMENT. ALL RIGHTS RESERVED



OCS / FREEZE FRAME / PIXEL MAGIC

Both of these direct-to-video films use NewTek's LightWave 3D but in distinctly different ways. The *Batman* movie combines traditional 2D cartooning with 3D animation and the *Casper* picture mixes live action footage with computer generated characters. These two applications of LightWave demonstrate its vitality and versatility and verify its expanding value in the entertainment industry.

OCS/Freeze Frame/Pixel Magic (see sidebar) produced the LightWave-engineered ectoplasmic effects on *Casper: A Spirited Beginning*. In *Batman Vs. Mr. Freeze: SubZero*, Foundation Imaging (see sidebar on page 26) is responsible for its dimensional delusions. Each movie presented the animators thorny challenges that pushed and refined two of LightWave's newest features—Cel Shader and Morph Gizmo.

Casper: A Spirited Beginning

Casper: A Spirited Beginning is actually a prequel to the 1995 movie *Casper*. When the *Casper* feature was produced by Steven Spielberg, Industrial Light & Magic took more than two years and 100 animators to create the 40 minutes of visual effects. OCS has produced an equal amount of visual effects, including 35 minutes of 3D character animation, using 20 dedicated LightWave animators and taking a super-charged five months.

The story of the project is a tale of moxie, talent, technology, and organization.

Last year, Ray McIntyre, Jr., OCS's vice president, heard that the producers of the planned *Casper* video were looking for a visual effects house. Even though OCS had not been invited to sub-

mit a demo reel and had never done any character animation work, McIntyre conferred with his two animators on staff, Ken Wilder and Jim Gorman, and decided to pursue the project. Within two weeks, Wilder had modeled a *Casper* and the team had composited him over some stock footage they had.

They won the contract and then the real work started. The first job began with breaking down the script shot by shot and surveying exactly what had to be accomplished. The main task initially was to model *Casper* and the rest of the ghosts. Wilder is the president of the Los Angeles Video Toaster Group and knows the community well. He had heard that Susan Ishida was at the forefront of modeling in LightWave with MetaNURBS. He hired Ishida and her partner Joe Clasen.

Together with Gorman, the four of them formed the nucleus of the modeling and animation team.

Because *Casper* and the "Ghostly Trio," Stinkie, Fatso, and Stretch, were in the original movie, Ishida wanted to stay faithful to the originals. But the only information that OCS received from ILM were plaster models of the ghosts that really didn't resemble the ghosts in the movie. So Ishida and Clasen rented the laserdisc of *Casper*, went through it frame by frame, and noticed that *Casper* was inconsistently modeled in the film. They chose shots of the most typical *Casper*, froze them on their Toaster, printed them out, and pinned them up around their house.

OCS received useful models of two new ghosts: Kibosh (James Earl Jones), is so evil that he puts the scare into neophyte ghosts;

(continued)



Merging the LightWave-generated ghosts with the live action was a complex task, especially with regards to the transparency of the ghosts. All compositing was done in LightWave.

OCS/FREEZE FRAME/PIXEL MAGIC

Outside OCS's building is a sunny but unremarkable world; inside, the dusky interior exudes elegance and mystery. The semi-concealed computer activity behind smoky glass doors and the ubiquitous costly equipment contribute to the classy and intriguing feel of the environs. Colorful movie posters accent the rose-colored walls and herald an impressive company resume of visual effects from *Independence Day* to *Waterworld*. *Casper* shot sheets lining the hallways are like hieroglyphics indicating the hyperactivity happening inside these darksome rooms.

The *Casper* project demonstrates the adventuresome leadership at the Toluca Lake, CA offices of Optical Cinema Services, OCS. In 1985, Raymond McIntyre, Sr., a post-production expert, began the traditional optical effects company to service the nearby Hollywood studios. In 1989, Raymond McIntyre, Jr. joined his father. When they acquired Freeze Frame, they added to their optical equipment and also their name. Pixel Magic was added in 1994 to reflect OCS's shift to digital effects.

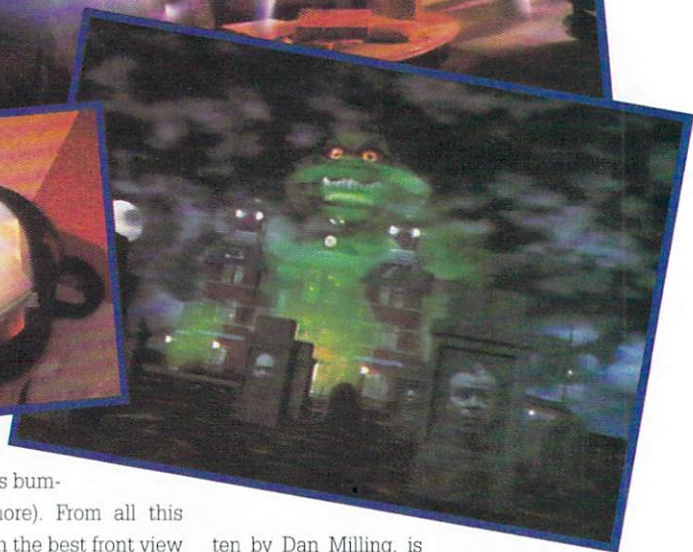
In 1992, Ray Jr. inaugurated OCS's digital effects department when he bought a Quadra 650. His first job on the Mac was to use After Effects to erase corporate airline logos from *Home Alone 2* so that it could play in-flight on competitor's planes. Until 1994, he was the digital department. From that humble beginning, the facility now is completely digital and contains state-of-the-art 2D compositing equipment like Kodak's Cineon and Quantel's Domino. With the advent of the *Casper* assignment, OCS added caches of powerful 3D equipment to its arsenal. With his eye on future LightWave 3D projects, McIntyre hopes to retain as many of the *Casper* animators as he can. Until *Casper: A Spirited Beginning* is released, you can catch Ken Wilder's LightWave jets tumbling through the skies of *Wild in America*.



and Snivel, who is Kibosh's bumbling assistant (Pauly Shore). From all this material, Ishida scanned in the best front view and side views of each ghost, aligned them in Photoshop, and imported the images into Modeler. With them as background images, she made a simple 2D version of the front and side of the ghost.

Then she started modeling point by point. A seemingly daunting project for us mere mortals, Ishida did admit to sculpting before. But she said, "that with MetaNURBS, you don't end up with that many points. And by hitting that Tab key every step of the way, you know how it's going to look." She said that the critical part of modeling is to think about how you're going to use the object. "You want just enough points so that you have all the control you need." (Fori Owurowa, the designer of LightWave's MetaNURBS, doesn't call Ishida the "Queen of MetaNURBS" for nothing.)

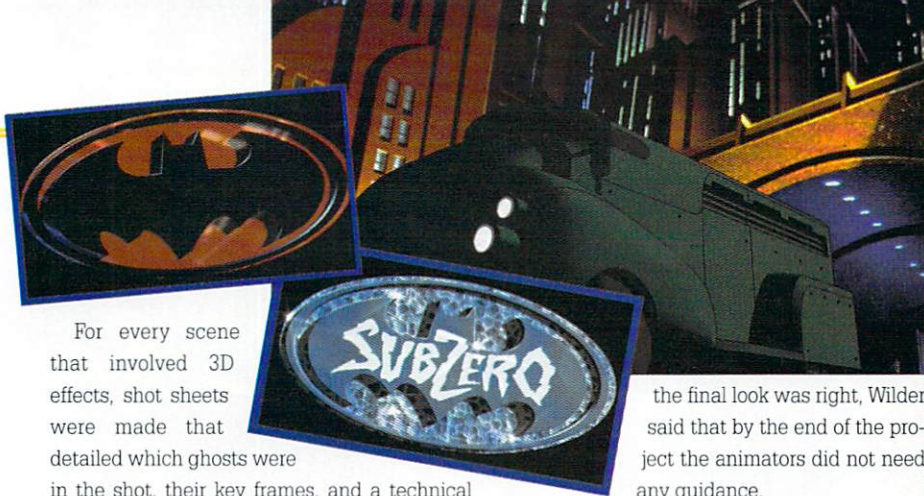
Now, if you can imagine, the movie demanded ghosts with a wide and fluid range of emotions. Casper is the "friendly ghost," after all. That meant Ishida had to model a series of morph targets for each ghost. Wilder said the typical character had 30 to 60 targets. Casper had 20 eyebrow, 30 mouth, and 20 eye targets. To animate the emotions and lip-sync the dialogue, OCS required an efficient method to control all these morph targets. The company found what it needed in two of Owurowa's plug-ins, Puppet Master and Morph Gizmo. (By the time you read this, NewTek will have released LightWave 5.5. Morph Gizmo, co-writ-



ten by Dan Milling, is one of its highly anticipated new features. Puppet Master is a plug-in that can be purchased separately.)

As a matter of fact, McIntyre admitted that it would have been impossible to even attempt the *Casper* project without LightWave and these two plug-ins.

Back on the set of the movie, McIntyre, acting as the digital effects supervisor on the project, was making sure that the live action footage would coordinate with the visual effects. He and the team also were making creative suggestions on how to best realize certain scenes. For example, the opening scenes explain how Casper became a friendly ghost and not a "scary" one. In the sequence, new ghost Casper is transported in a train to Ghost Central Station for ghoulish school. Originally, shots of a real train (the Hollywood term is a "practical") were planned, but Gorman suggested creating the whole sequence in LightWave. The result is a lively, wraith railroad that pulsates and serpentine its way through the terrifying terrain. A cackling locomotive fashioned from an animated skull spews vomit-green smoke teeming with hyperactive ghosts. Bony armatures propel the wheels; and the disappearing tracks shed a ghoulish phosphorescence on the creepy countryside. Try doing that with a practical. Ghost Central Station is also a delightfully eerie testament to the creative collaboration of the production team.



For every scene that involved 3D effects, shot sheets were made that detailed which ghosts were in the shot, their key frames, and a technical description. (Stretch flies in, picks up a CG stick, and hits Fatso on the head.) When the live action footage was available, a video still would be added onto the sheet. The page then would be pinned to the hall walls of OCS when the animation for the shot went into production. This organization was vital because of the sheer magnitude of the project that entailed 510 shots and over 50,000 frames of animation.

To achieve such a mammoth task, McIntyre, drawing on his training as an engineer (and perhaps, his experience as a race car driver at Daytona), constructed an in-house spreadsheet and database that served as an amazingly detailed and efficient tracking system. As production ramped up in February, more animators were hired. For maximum use of the facilities over a tight timeline, two shifts were scheduled. When the artists were not using the 500MHz Alpha-based workstations, the machines were shepherd back into the render farm barn.

One of the challenges with the new animators was to sync them aesthetically with Ishida and the rest of the original animation team. For Ishida, it was important that the animators stayed true to the movie. "Animating is like acting, only you're making your own emotions happen on the computer screen," she said.

To realize the feel and look of the emotions, she encouraged the animators to read lines out loud to each other and to study themselves in the mirror. Though she and Wilder decided if

the final look was right, Wilder said that by the end of the project the animators did not need any guidance.

Finally, when the animations were complete, the 3D ghosts were lit and textured. Tweaking the transparency of the ghosts proved to be especially difficult because a majority of the movie was shot in daylight. Casper's corporeality had a tendency to change depending on the backgrounds. Once all the elements were adjusted, they were composited with the live action footage. Even though OCS has high-end compositing equipment, all the 3D compositing was done in LightWave. Once the shots were completed and approved by the client, they were transferred to D1 tape and sent away for final editing. At press time, the final frames of the 50,000 were being rendered. Look for Casper, your friendly LightWave ghost, in video stores this fall.

Batman Vs. Mr. Freeze: SubZero

Batman celebrates his 59th birthday this year with the arrival of fraternal twins—Warner Bros. live-action blockbuster *Batman and Robin* and the made-for-video, animated feature *Batman Vs. Mr. Freeze: SubZero*. Unlike the frothy, foamy performance by Hollywood's current hunk George Clooney, the airborne adventurer of SubZero is still the Dark Knight, true to his comic book origins. So when SubZero's director Boyd Kirkland approached Foundation Imaging about working on the new movie, he wasn't searching for the spectacular spaceships or the exotic creatures for which Foundation is

sitting in the shadow of Magic Mountain on the outskirts of the provincial Valencia, CA—devoid of traffic and ripe for expansion—is a nondescript business park. Inside the corner building, Foundation Imaging's generic offices surround a large room overflowing with rows of animators concealed in semi-darkness. Upstairs, bills are paid and deals are made under the bright lights that shimmer on their collection of Emmys. Out back, a large studio/warehouse/unnatural history museum hosts models and miniatures and construction accoutrement from numerous projects past and present.

But to find the soul of this anything-but-ordinary company look to the parking lot on a Friday afternoon. Every Friday everyone—from founding fathers to fledgling interns—gathers beneath a long blue tent, à la a Fellini movie, to barbecue a hearty meal and enjoy each others company. None of this scenario seems remotely British, but the two founders are, in fact, from England. Friends since 1983, Ron Thornton and Paul Beagle-Bryant each pursued different careers. Thornton gained notoriety as an animator, model maker, and motion control specialist in the entertainment industry. Beagle-Bryant became a computer expert working mostly in the business sector. They emigrated separately to the US; and in 1992, they formed Foundation Imaging. Their Emmy Award winning work on "Babylon 5" established them as LightWave legends around the world.

Foundation Imaging has been busy lately creating LightWave 3D visual effects for a number of feature films, television shows, and a Las Vegas attraction. Watch these shows and test your LightWave spotting skills.

- "Scorpion I & II", Paramount Television's "Star Trek: Voyager"—these are last season's cliffhanger and this fall's premiere.
- "Beetleborgs Metallix", Saban Entertainment's children's TV series
- *Star Trek: The Experience*, Landmark's upcoming attraction at the Las Vegas Hilton.
- *Contact*, TriStar Picture's release starring Jodie Foster
- *The Jackal*, Universal Picture's Bruce Willis and Richard Gere remake of *The Day of the Jackal*.
- "steve.odekerk.com," the NBC comedy special to be broadcast during September sweeps

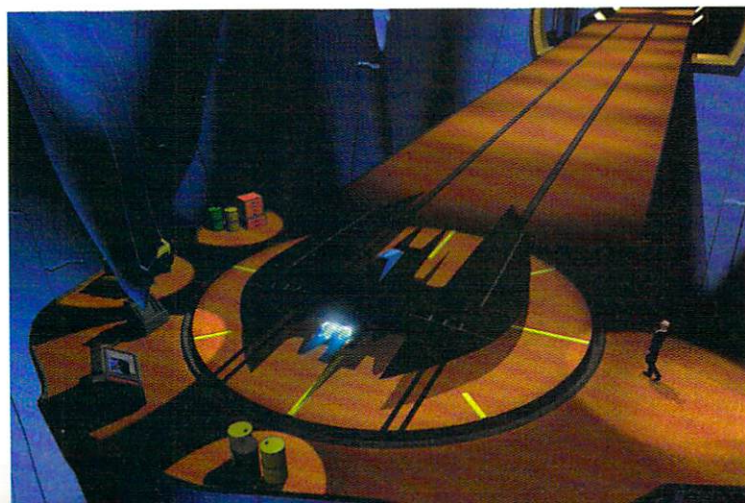


Hotsy and Ginger—Characters from the Steve Odekerk comedy special.

If you want to check how you did, Joe Tracy's *NewTechniques* Web pages (www.studiovisions.com/newtechniques) will have a complete description of the effects.

reversed. Kirkland had much subtler intentions. He wanted to use computer-generated 3D animation to create 2D-looking shots that were impossible or too time-consuming with traditional cel painting techniques.

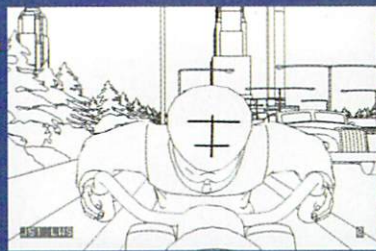
Kirkland, the co-writer and co-producer with Randy Rogel, had worked for several years on the Emmy Award-winning "Batman" cartoon TV series. Tired of the weekly grind and the restrictions of Standards and Practices (TV's censors), he convinced management to let him develop a stylish full-length feature that would appeal to kids as well as Batman's young adult audience. Kirkland had heard of Foundation Imaging through its work on "Babylon 5" and approached Ron Thornton through a mutual



Top left: The regular Batman logo and an iced SubZero version.

Top right: Mr. Freeze's van.

Left: The Bat Cave à la Foundation Imaging.



The original sketch of the action is transformed into the final animation (right) by green matte compositing an animation of the road with another of Dick on his bike.



friend, SubZero storyboard artist Phil Norwood. Kirkland chose them because he was impressed by their bid and their enthusiasm.

Indeed, Kevin Kipper, Foundation Imaging's visual effects supervisor on the project, jumped at the idea of pushing LightWave into the 2D realm. Of course, Allen Hastings was one of the first people he called when the company got the job. Hastings already had designed Cel Shader, the LightWave 5.0 feature that takes a 3D object and renders it with a flat 2D look, but this version did not have the range of options necessary for the control that Kipper needed.

While Hastings tweaked Cel Shader, Kipper sat down with Kirkland and studied the story reel of pencil drawings that Kirkland had created. Kipper said, "We were able to pick shots that we knew that Foundation Imaging could do or were hard to do in traditional animation." For example, a shot of a car racing down the street with the camera following it would have required that a cel animator redraw the background in every single frame because the perspective is constantly changing.

Once the shots were earmarked for Foundation to create, the first task was to build all the objects needed in the scenes. Warner Bros. sent over model sheets and black-and-white line drawings of vehicles like Mr. Freeze's van and the Batwing. Jeff Scheetz, who modeled the Batwing, had a devilish time matching the different and inconsistent 2D views with 3D reality. The biggest problem came in modeling the cockpit windshield and retractable canopy. Some 2D versions of the cockpit were so cramped that to fit in, Batman would have needed to stow his cape and cowl in the Bat trunk.

So Scheetz did what all good animators do, he fudged it when it had to match a 2D shot.

Once the models were finished, they were surfaced in white with a black outline, animated and rendered against a white background. In effect, the result was a black line drawing of the objects animated on a white background. Foundation Imaging printed the scenes out frame by frame on paper and sent them to Asia to be used as guides for the character animations of those scenes.

All of the character animation was created with traditional cel painting techniques at two facilities in Asia. A studio in Japan provided the key animations, the extreme poses, and the layout. In Korea, animators did the in-between artwork, the painting, the clean up, and the camera work. In order to later composite the cel paintings with the 3D work, the images were shot against either a red, blue, or green matte background. The cels were photographed and the negatives were sent back to Warner Bros. Foundation Imaging had the negatives scanned and transferred to digital.

Now the task was to match the LightWave models with the 2D. Kirkland had established a look to the film that might best be described as a mix of gothic, steel moderne, and film noir. Animator Rob Bonchune said that rather than using Cel Shader, he resorted to other techniques, like fooling around with image maps, to achieve the look for his underwater submarine shots. Jeff Scheetz noticed that the cel-painted backgrounds had distinctive highlights along the edges. He achieved a similar effect when he designed the Batcave by grouping spotlights with a large falloff very close to the edges of his

objects. Other animators like Emile Edwin Smith tweaked with their models so that the Cel Shader gave them just the right look.

When the animations were fine-tuned, the frames were rendered and sent to Sherry Hitch, Foundation Imaging's compositor. Hitch worked on the *Batman* project with a Windows NT beta version of Adobe After Effects. She not only composited the Asian cels with the LightWave animation, she also added layers of 2D effects. Probably the most complicated sequence is the one where the polar bears break through the ice floe and start swimming underwater. Hitch figured that she added 20 to 30 different layers to some of the frames including bubbles and water distortions. Kirkland would stop by almost daily to discuss and approve the frames.

Kirkland admitted that at first, he was worried because he had seen combinations of 2D/3D work that didn't look right. But as he prepared for the first in-house showing on a large screen, he thinks the elements cut together wonderfully. "The whole experience with Foundation Imaging was great," Kirkland said. "Their 3D work really enriched the production value of the film and has definitely set a new standard."

Kirkland said the release date of *Batman and Mr. Freeze: SubZero* is in the hands of Warner Bros. Home Video. He thinks it will be released after the advertising blitz for the theatrical feature has ebbed—sometime in late fall.

Dick De Jong and Molly Dinkins produce video documentaries and animations for Multimedia Associates in Austin, TX. They can be reached at mma@eden.com.

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Circle #216

TEKMASTERS

MEET THE INNOVATORS OF THE INDUSTRY—PAST, PRESENT, AND FUTURE

OZware's Michael Holten: AUSSIE RULES

NewTechniques: Most people call you Aussie. What is the background behind that nickname?

Aussie: The name Aussie sticks cause I refuse to give up my Australian heritage. I eat vegemite when I can find it (a yeast extract... like sucking on a beef cube), buy my mates a beer, and follow Aussie Rules football. We go down under every couple of years to visit family and hit the beaches. I do not have much of an Australian accent left but I can lay it on heavy if I get caught jaywalking.

Things are simpler in Australia. If you require me to call you "Sir" then that means that I won't drink with you... because you think you're better.

NewTechniques: What is your background in sound and video production?

Aussie: I have a habit of picking up a new hobby and sticking at it, till eventually someone starts paying me and it becomes part of my work. Then I search for the next hobby.

I have always been involved with music. Originally I played drums but got tired of dragging a drum kit around and so switched to bass. I became a musical arranger for big bands, attempted to survive as a rock 'n' roll musician, and progressed into both electronic music and "musique concrete" performances.

I came to Seattle in the mid '70s because I was tired of waiting for Australia to add color TV. After arriving in the States I started working in video but was also attracted to theatrical sound design. Here I could create magic. Trap an audience in a dark room and give me control of the sound and I'm in heaven.

My best soundtrack was "Of Mice and Men." Other favorites include some Sherlock Holmes mysteries and the world premieres of "Savages," "Illuminatus," "Frankenstein" and Stephen Sondheim's "Into The Woods."

My theater circuit included the Old Globe Theatre in San Diego, CA where the production manager later consented to be my wife. She had installed an Amiga 1000 with Charlie Richmond's Command Cue program to run the sound in on the main-stage theater. Command Cue could matrix literally hundreds of audio channels in, and create individual mixes for every one of hundreds of mixer outs. It took ages to write sound cues, but you could design complex sequences that were easily repeatable.

I was soon loaded with a half dozen Amiga computers, and each of our kids had one at the age of two.

NewTechniques: When did you start programming?

Aussie: I started programming artificial intelligence experiments on a CPM computer. Next I went to an SX-64 (portable C64) and programmed it to create 26 instant wipes through the external key on my video switcher.

Then I added an Amiga 1000 tied to my A/B roll editing system, which built a timeline Edit Decision List and automated all audio levels for eight channels of ANY audio mixing console. I could click anywhere on the timeline, set up a split edit, and automatically recall the audio mix when tape started to roll. I had an eight-channel audio tape chasing the videotape and became very familiar with MIDI and MIDI time-code, which I love.

NewTechniques: How did you become involved with the Toaster/Flyer?

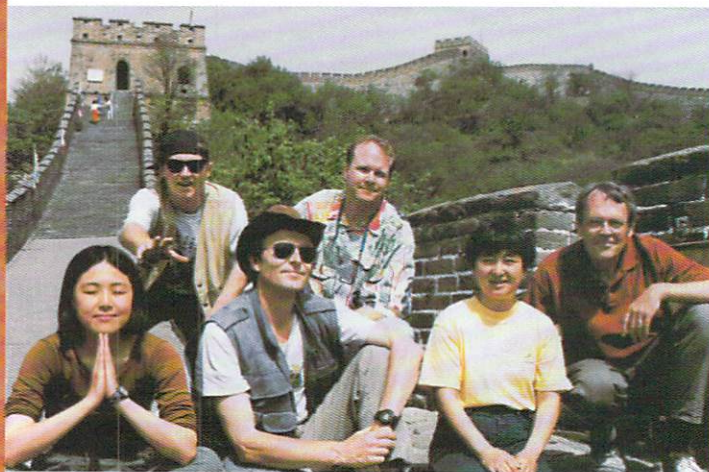
Aussie: I added the Toaster a few days after its price was raised by \$1,000 (good timing on my part) and fell in love with it. As soon as I heard of the Flyer I leapt aboard.

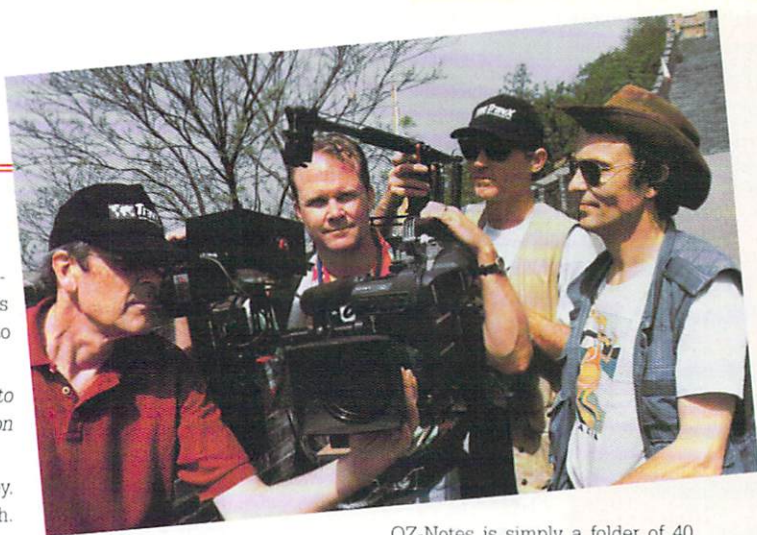
There are three reasons why I knew the Flyer was right. First, I have a lot confidence in Tim [Jenison] and the circle of mates that NewTek attracts. Second, now that I have a

EDITOR'S NOTE:

NewTechniques had the opportunity to interview Michael Holten (known as "Aussie"), who is an award-winning video producer, editor, and theatrical sound designer, working from his small farm outside Seattle, WA. Aussie is one of the Flyer's leading third-party developers, releasing editing tools for the Flyer through his software company, OZware. We thank Aussie for his time in granting this interview.

You can see Aussie in person at NewTek Expo 1997 where he will be teaching Flyer courses.





family I need to be conscious of not blowing my profits on the video equipment vacuum. And third, the Amiga is a delight to program on, and I love to fiddle.

I use every part of my Toaster when editing with the Flyer, including turning on ChromaFX when digitizing so that I can "rub-in" blue skies when needed. For awhile, I was creating a one-hour radio show each month on the Flyer. So I'm also very aware of taking the audio tracks to the max.

With the way things change in the world of video, I am amazed that the Toaster (one of the oldest pieces in my system) is still the center of it all. I just want my Flyer to be complete with HDTV and Dolby Surround Sound. Then I'll be happy. . . and probably ready for a new hobby.

NewTekniques: How did you become an Emmy Award-winning editor?

Aussie: We were awarded a Seattle Area Emmy Award for our documentary named "A Question of Survival." This half-hour piece examined the medical implications of nuclear war. Did you know, for instance, that the total funds used by the medical community to eradicate smallpox were less than three hours of money spent in the 1980s arms race?

We did similar productions on Three Mile Island, Trident Submarines, WPPSS nuclear fiasco, and veteran's rights. Back then people could not decide if we were too political to be artists, or too artistic to be political. Now it's "in." I think we became

quite good at capturing the emotion and rhythm of a story and it has been enjoyable to use our talents to "speak up."

NewTekniques: What have you found to be the most profitable production with your Flyer system?

Aussie: I rarely measure profit in money. I look first at who I'm working with. Next I consider whether it will be fun, challenging or rewarding, and where it will lead to. Generally I am drawn toward royalty income. With theater sound design, I aim at world premieres, because there is more chance that my sound tapes will travel with the show and have a long life. In video production, I practically always retain ownership of the footage. Of course sometimes you would make more by making the dubs than you could with a negotiated percentage. But I generally like to have a lot of irons in the fire.

"Discover China Today" was probably our highest dollar per finished minute ratio, but our "Childbirth" series with Penny Simpkin and our "Charles Russell: Artist of the Old West," continue to do well.

NewTekniques: What inspired you to begin writing AREXX scripts and third-party products for the Flyer?

Aussie: After 14 months of negotiating, we had been selected as the first foreign production company contracted by the People's Republic of China. It was fantastic during the shooting, but when it came to editing from over 30 hours of footage, I felt that a

few tools were needed. Here I was with a computer waiting for me to work out some timecode arithmetic. It was time for the computer to do the work. (This was the original OZ drawer that we released on the BBS and later included with Flyer 4.1.)

For the China production, I had designated three days for my sound mix. I changed my mind and instead decided to spend those three days creating a music mix routine to raise and lower my music intelligently. Thus Co-Pilot Audio and Co-Pilot Video were conceived.

Most ideas come about through necessity. When I realized it would take 194 button clicks to make 14 CG pages into Flyer Stills, I fixed it so that the computer does the clicking, while I enjoy a beer. When I could tell which shot I had already used (from over a dozen waterfall shots) I wrote a routine to compare the project with a folder. When I needed to use some old Toaster/GPI/Framestore tricks, it turned into Fast Frames. I am often shooting with multiple cameras, etc..

I also enjoy hearing from users with new ideas, special needs, or adaptations. The hotkey for inserting room tone was a great suggestion from the BBS. I had originally designed the Find Unused routine to locate unused shots but I discovered that folks were using it to identify files that could be deleted, so I modified it to provide safety options and levels.

NewTekniques: In the new Flyer 4.2, you've included a new folder called OZ-Notes for free. What is OZ-Notes and how do they work?

Aussie: In 4.2 we updated the original OZ folder of freebies and added a few new things including our folder of OZ-Notes. When I'm editing, I dislike writing notes on paper, so

OZ-Notes is simply a folder of 40 passive croutons with a text note for an image. These can be placed at the relevant place in your project. This way you end up with a visual reminder on your project screen, instead of a stick-um note on your monitor.

After one recent edit, I've also considered making an OZ Critic folder where I get to bitch at the crew and talent. Such as "Focus the Camera Dummy," "More Light please!" and even "She Can't Act..." followed by "...But She Can Cook!"

NewTekniques: Now most people think that learning to program is difficult. How hard would it be for a person to write AREXX programs and where would they learn it?

Aussie: I have programmed in many languages and most can send an AREXX message that tells the Toaster or Flyer what to do. Working from a manual, though, is hard (Note: I have a new respect for good manual writers.)

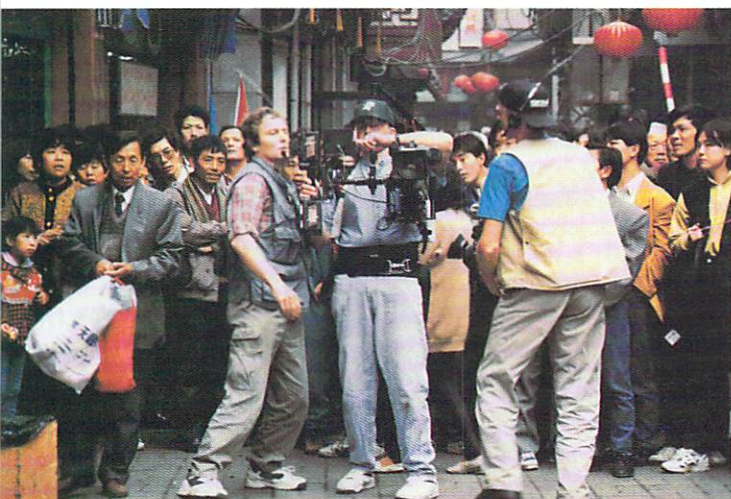
When I taught myself AREXX, I simply opened other folks' programs and read through it, occasionally looking up a term in the AREXX manual. Writing a basic working routine is really quite easy. Open any word/text processor and start a new page and type the following. The first line of any AREXX must start with a comment.

```
/* Anything between these marks
is a comment */
```

```
address command "c:VoidAll"
```

Save this file as an ASCII or TEXT file and place it in your Newtek:AREXX/Editor folder. Double click on it to run. You have just added a button to your Flyer that will run NewTek's VoidAll routine.

(continued on next page)



TEKMASTERS

OZware's Michael Holten: AUSSIE RULES (continued)

(Actually the button is just a crouton that accesses the file you wrote.)

It becomes more tricky to make a program safe and friendly for other users. If you were to release this VoidAll routine you should also add a warning that appears on the screen telling the user what is about to happen, and also give the option to cancel. On your new 4.2 disks you can look at a final example in the Third Party/OZ drawer.

Just remember, if you dive into someone else's ARexx routine and make changes, then it is expected that you will be courteous and remove the original author's name from the code—so he/she is not blamed!

NewTekniques: You seem to be so good with ARexx programming in all areas. Have you ever given thought for working with NewTek in building their upgrades?

party programmers. I'm more likely to call one of them than NewTek. Both Bill and Ray at ProWave and Jeff at Visual Inspirations have not only shared code but also helped create code for each other. We all share a common goal while working in different directions.

NewTekniques: You seem to have a unique philosophy about everything around you including the way you talk to your dogs. Can you tell us a little about that?

Aussie: Unique? Do I? Hmmm. . . Sounds like fighting words to an Australian!

A few years back Erica (my wife/partner) and I decided to move to the country so that our children would have fences to climb. So when folks call for tech support they often hear a rooster. (Bet you don't get that at Avid.) When I talk with NewTek our horses start neighing. You look up from editing and see ducks looking in the window watching you. We finally got rid of the goats because they only left me with one quiet hour a day for narrations.

I teach the animals to respond to terms like "Thank you" (which means "Shut up") and "Excuse me" (which means "Get the heck out of my way.") It's very hard to yell "Thank you" and sound angry. So with 31 pets, it helps keep us all calm.

We are very involved in our children's lives and they in ours. In fact it was my nine-year-old son, David, who hounded me into creating the OZ Preroll command for the Flyer (so he could get me involved in a game of Joust). He also enjoys karate and Cub Scouts, of which I am the local Cub Scout Leader. This has nothing to do with being a good model, but more because I'm a clown who wants the boys to have fun and be amazed. Erica is a leader for our local 4H club in which Jennifer, my 13-year-old daughter, is an excellent horse rider. My family is the best one could hope for and always makes me proud.

NewTekniques: Can you let us in on some of the new ARexx scripts you're working on and approximately when they'll hit the market?

Aussie: Co-Pilot Audio and Co-Pilot Video have more than 100 editing commands and take care of most of my basic needs for the Flyer. Now I get to focus on specific production styles such as multicamera work, documentary editing and live television.

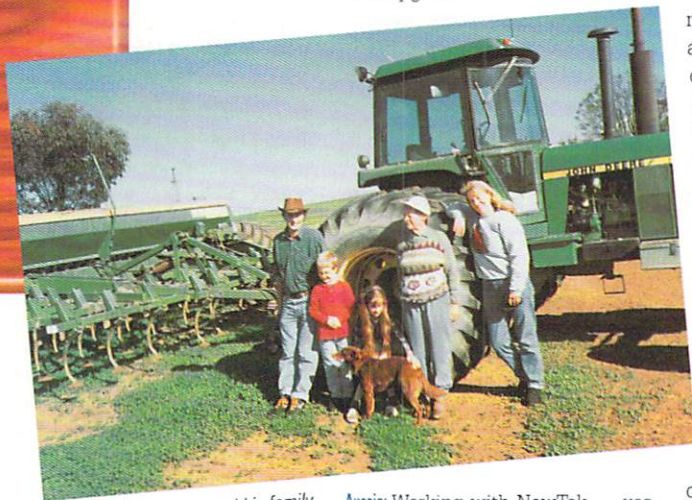
This summer we will update Fast Frames to version 2.0. This lets you easily sequence fly-on and fly-off titles over video when digitizing as well as removing loading time delays between Framestores. We also will release two new programs: Aussie's Multicam Editor, which can synchronize and edit multiple camera productions, and Speed Zone, which lets you smoothly alter the speed and direction of clips and adds more than 100 strobing speeds to strobe to the beat of the music.

Shortly we will have a new set of tools for documentary and talking head videos (where you end up covering most of your video clips with cutaway visuals). I have used these for quite awhile and I'm anxious to get them out. I am also examining tools for "Toaster only" setups, incorporating MIDI files into sequencing, and a few other things. I heard that many folks would like a video for Co-Pilot. I'll try, but it's hard, though, to keep me in front of the camera.

NewTekniques: What parting "Aussie" Flyer tip or technique can you leave us with?

Aussie: When a client asks for something extra, please don't say, "It's easy!" Instead, stare at some spot on the wall for a count of three and then say "We can do that." Then send the client away for a bit and wrap it up. Never say easy. Clients don't like to pay for "easy."

One thing I would like to add is a separate mouse and pointer for the clients. I would design it so that their pointer does nothing but point. That would stop them from reaching over and touching either the screen or my mouse.



Aussie and his family
visiting Down Under

Aussie: Working with NewTek. . . yes. Working for anybody. . . No, 'cause I'm just too independent.

Partying with? Absolutely. I'd love to have a classic musical jam session with some of the great closet musicians (who use Toasters) along with Tim Jenison on piano. Add Jeff White (Visual Inspirations) doing his magic show and we will call it the Third-Party Party.

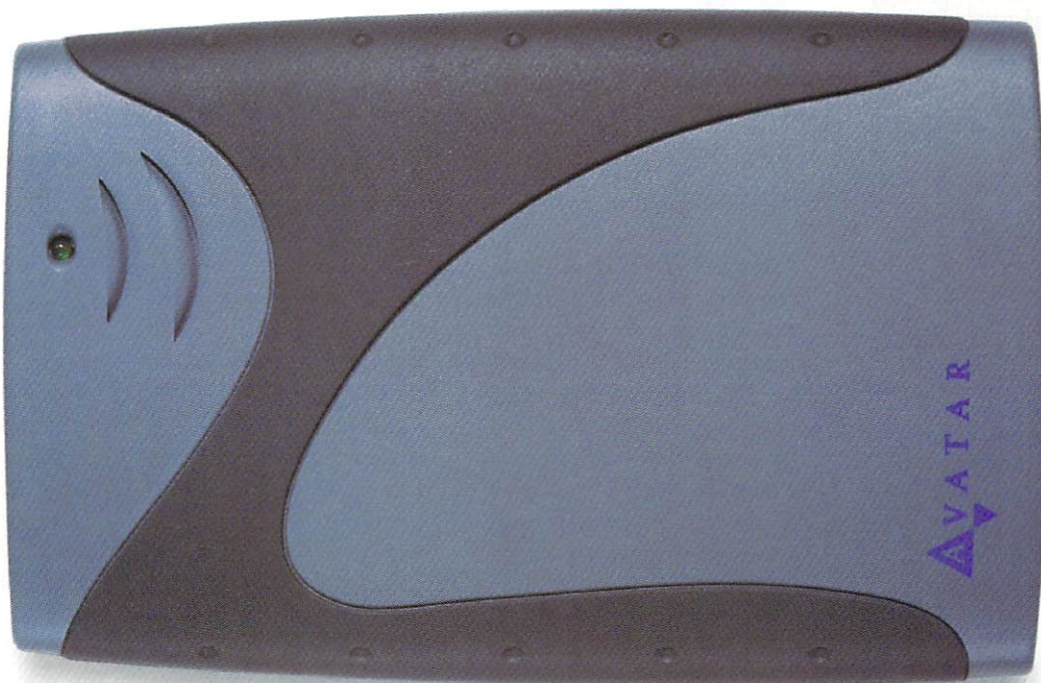
There are some fun folks and good mates over at NewTek. But I try not to bug them too much. One of the most powerful assets right now is the camaraderie between the third-

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Circle #217

LightWave 101

A UNIVERSITY-LEVEL COURSE WITH INCREASINGLY DIFFICULT LIGHTWAVE TECHNIQUES



BY SCOTT
WHEELER

Digital-Evolution

THE DNA STRAND GETS COMPLEX

More complex modeling work on the DNA strand created in last issue's LightWave 101.

Welcome to another exciting LightWave 101 class. In this installment, we're going to delve deeper into the inner workings of LightWave 3D and Modeler. We'll be using the model from last class, so hopefully you still have it kicking around. If not, then pick up the last issue of *NewTechniques* and make it again because you can't go on without it! Actually, I have made a spot on my Web page (www.uberfx.com) where I will be placing past articles. So if you lose an object or are just plain lazy you can get what you need from there.

This does bring up an important point. From here on out, we will be using what we make in each article to build toward a final project. For this year's LightWave 101 course, we have this article and one more (October) until the end, so we'll take what we make now and apply it to the finished project in the next article. I will also be picking up the pace a bit by doing a little less basic explanation.

Let's Begin!

1. Open LightWave and press the Modeler button to enter Modeler. You need to load in the DNA object from the last article. Now press [a] to fit the object in the views nicely. Your Modeler screen should look like *Figure 1*. We need to perform some minor surgery on our object to prepare it for use in this section so let's make a copy of it [c] and switch to the second Modeler layer [2] and then paste the copy [v]. Your window should look like *Figure 1* with the exception that we are now on layer 2.
2. The scene we will be creating requires a few long strands of DNA. Therefore, we need to make our short strand into a long one. To do this we are going to use the clone tool. Let's start by removing the first inner bar

of the DNA strand. In the TOP VIEW (without zooming in) place your cursor on the origin (X:0, Z:0) and click once with the left mouse button. Now you should have a series of polys from the first inner bar selected. Press [] to select all connected polygons and then [x] to remove the offending bar. Your screen should look like *Figure 2*.

3. We're now ready to clone out the DNA for use in our scene. It's also time for me to apologize to those of you who have 32MB or less of RAM, since this scene is going to have about 96,000 polys in it when finished! It'll be worth it though. Before we clone out our DNA, let's make sure we know the distance we need to offset our clones; [ctrl-q] puts us in measure mode. On the

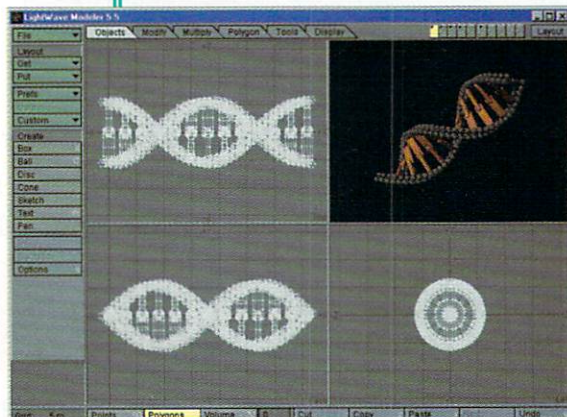


Figure 1

TOP VIEW, place the cursor back at the origin then click and hold down the left mouse button. Drag the mouse out to the far right side of the last inner bar and read the measurement in the lower left portion of the Modeler screen. If all went well it should read 37 meters. This is the extent that we will move each clone along the x-axis.

4. We are now ready to lengthen the DNA strand through Clone [ctrl - c]. We want to make two clones of our object so put 2 in the Number of Clones input field. We determined the offset to be 37 meters for the x-axis, so enter 37 in the X Offset input field. The final value will add a slight rotation on the x-axis to line the clones together. Since we removed the first inner bar and measured to the right side of the last inner bar, the distance each clone will be offset (37m) is the length of each strand minus one-third the distance between each inner bar. Therefore, since the angle of each bar is 30 degrees more than the last one, we need to make our cloned DNA spin 10 degrees per clone. So enter 10 for rotation on the x-axis. Leave all other numbers alone and click OK. After a few seconds you should have a long DNA strand. Pressing [a] should give you Figure 3.

We need to perform some light housekeeping on our strand before we move on to our next object. During the creation of the DNA strand, we broke a cardinal rule of modeling by not making the object lengthwise on the z-axis. Many of you might have noticed that when you brought the object into

Layout, the Pitch and Bank moved the object in ways you did not expect. This is because Bank is based on the z-axis. If you have not tried rotating the object in Layout, save it out now and rotate it around a little.

5. To clean up, we need to orient the object correctly along the z-axis. In the TOP VIEW, place your cursor on the origin and press [e]. Each press of [e] will rotate your object 90 degrees counterclockwise and it's far faster than using the rotation numeric requestor. We can center the object by selecting the Center macro in the Objects Custom menu. The final step in readying the DNA strand is to reduce its size by one-half. We do this in the size mode [shift - h] and using the numeric requestor [n]. Click Reset, then enter 50 for the Factor and click OK. If you press [a] at this point your display should look like Figure 4. Save the object [shift - s] in a place where you can find it and call it "DNA.lwo." Clear out Modeler [shift - n].

Congratulations! We have finished modeling our DNA strand. As an incentive to keep you from going mad in the next phase of our project, I present you with Figure 5, the finished project we are aiming at. Before we move on to Layout, we need to create several other objects that we will be using in our animation.

The first of these objects is a dome that we will use to map an image or procedural. This will give our background some life and texture to help set the mood.

6. Create a ball [shift - c] and supply the following values to Radii (X: 100m, Y: 100m, Z: 100m), leave all other values (continued on page 38)

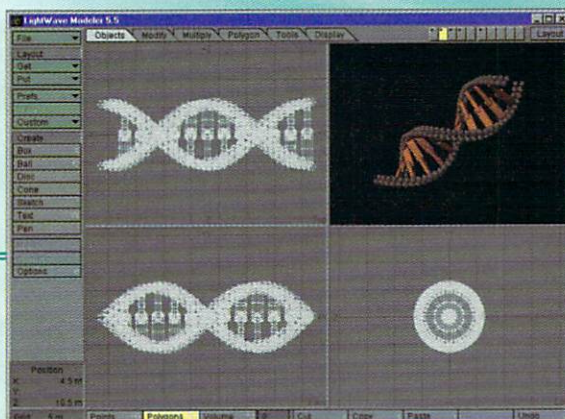


Figure 2

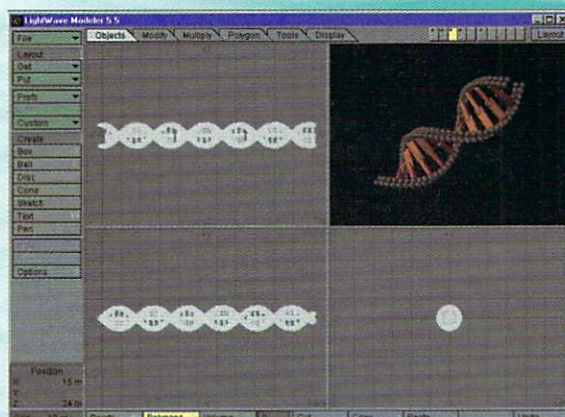


Figure 3

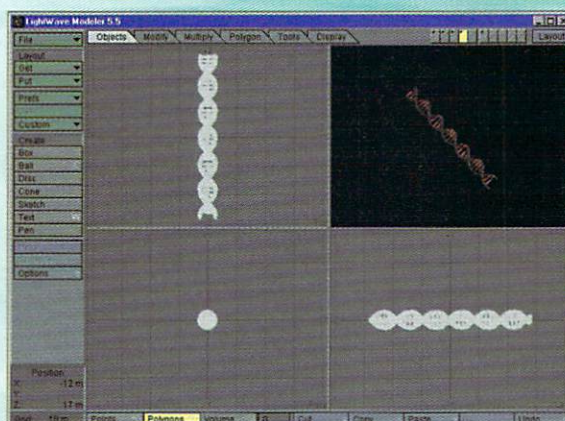


Figure 4

Flying High

TIPS, TECHNIQUES, TUTORIALS & SHORTCUTS FOR YOUR VIDEO TOASTER FLYER PROJECTS

BY JOE
TRACY

Questions, Tips, and Tricks WHAT'S NEW IN FLYER 4.2

NewTek's Flyer 4.2 delivers fixes, features, and a little bit of confusion.

Welcome to a special expanded edition of Flying High! By the time you read this, you should have the Flyer 4.2 upgrade (free to all registered users of 4.1). If you don't, then call NewTek customer service at (800) 847-6111 to track down your copy.

Flyer 4.2

NewTek never intended Flyer 4.2 to be a feature upgrade. It was always meant to be a maintenance upgrade that fixed little things here and there. Due to the involvement of third-party companies, however, you'll find it to have some pretty cool features.

Foremost on the feature list is MegageM's timeline viewer, YBT (Figure 1). This is a full working version of MegageM's original popular timeline viewer that allows you to view your project in timeline form. This is a great addition to the Flyer, as a timeline has been one of the most requested features. Until a full working timeline interface, with editing capabilities, is built or integrated by NewTek, I'm sure you'll find YBT or the more advanced options from MegageM to be useful. To run YBT with the Flyer, use the icon called FlyerPlusYBT found in the NewTek drawer where your NewTek files are stored.

Another great addition to Flyer 4.2 is something very simple, but useful. OZware has included a folder in its ARexx directory called OZ-Notes. Open up the folder and you'll find a bunch of color-coordinated croutons with messages on them like Bad Audio, Replace Music, End Music, Set Audio Narration, and dozens of others. You can put these in your

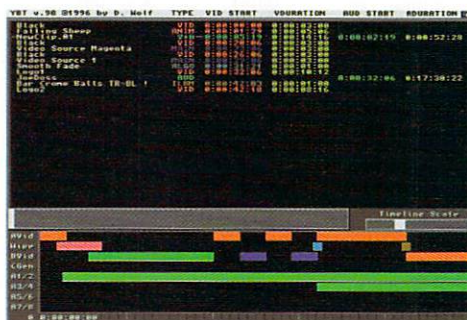


Figure 1

COMMENTS OR
SUGGESTIONS

email:

jtracy@

main.rosenet.net

project as reminders. Check out this issue's "TekMasters" column for more information on this addition.

Visual Inspirations and ProWave also jumped on board with a series of ARexx scripts to make your job easier and more productive as an editor. You should have a VI and ProWave folder in your ARexx directory that contain these scripts. From joining video and audio clips to grabbing Input 1 and having it automatically processed and saved as a Flyer still, you'll quickly appreciate all the goodies they've included.

Finally, look for a demo version of ImageFX 2.6 found in your NewTek drawer.

Kudos to NewTek for involving these companies and for providing hundreds of fixes and small enhancements. You should now also find fewer and more defined error messages.

The biggest enhancement is that ChromaFX now works in projects! Here are a few of the more popular changes and fixes:

1. Data integrity was improved with seek routines, which results in a better success rate when you reorganize your drives.
2. Key pages now inherit properties.
3. The audio control panel has been rearranged to be more consistent with the video control panel.
4. Easy Anims in LightWave 3D now loop.
5. The file transfer rate between the Amiga and Flyer has been enhanced so that certain third-party products will work faster (like ProMix).
6. Large audio drives won't periodically disappear now!
7. Video recordings larger than 4GB will no longer corrupt the clip data.
8. The ToasterPaint Flood command now works correctly.

Install Problems

While the upgrade is a strong addition, I found the installation and directions for installation to be confusing for the average user. For example, if you were told to "make sure 4.1d2ca is installed prior to installing 4.2" would you know what to do or what in the world 4.1d2ca was? What ever happened to the good old days where you pop in the install disk and CD, double click on install, and everything else is automatic?

Now to clear up the confusion (or add to it). 4.1d2ca was the final release of 4.1D and had the ability to identify the chipset of a Flyer using a serial number check routine. This was needed because

NewTek had to change chipsets on newer Flyer boards because of the discontinuation of another chipset it was using. The Flyer software had to be altered to match the chipset being used. Use the wrong software and your Flyer card will be damaged and need to go in for repair! Both software routines are on the 4.2 CD, but your serial number has to be identified first so that the Flyer knows which one to install. Users of 4.1d2ca had the serial number properly installed or were assisted in doing so.

So why wasn't a check routine built into the 4.2 install? How hard would it be to have the install check to see if your serial number is properly stored in EEPROM on the Flyer card? If it is, then it checks it and moves on with the proper installation. If it isn't, then a technical support number pops up on the screen so that you can be assisted in the process.

After sending out 300 upgrades, NewTek held up on sending out the rest so that it could work on better documentation to eliminate the confusion. If you are one of the latter bunch to receive the upgrade, then consider yourself lucky!

TIPS

Long Project Crashes Eliminated

While working on a large Flyer project, you might notice that selecting a video drive causes your computer to crash. Chances are that one of your video drives contains more than 185 clips, exceeding the Flyer's limit. To fix this problem, simply move some of the clips to another drive or create a folder and move enough clips into it to get below 185. To create the folder, hit the New

Folder button at the bottom right corner of the screen while the video drive is highlighted.

Save Flyer Processing Time

When working on a long Flyer project, you might not like the processing wait when wanting to view just a small portion of your entire project. The cure is to effectively use the Play From button, on the main middle toolbar, and the Stop icon located in the Control folder in the Effects panel. Let's say that you have a project with 150 clips, but you want to view clips 10 to 20. Move the Stop icon just past clip 20 and highlight clip 10 and press the Play From button. The processing speed will be much faster because it is not processing anything before clip 10 or after clip 20, thus saving you a lot of time.

MEGA TIPS FROM THE FLYER MASTERY GUIDE

Find Project Clip Immediately

You'll notice that when doing long projects, if you change the file view, the project screen doesn't remember which clip was highlighted, so you have to search for it. Not anymore!

Highlight a clip and look at the top left of your screen. Your clip name is displayed. Look to the left of the name and you'll see a number. Your first icon is clip 1.1, which means that it is in Row 1 and is the first clip (Clip 1). Highlight your second clip and it says 1.2. This means that it is in Row 1 and is Clip 2. If you go to your second row, the numbers start with 2.1, and so on. These numbers identify the exact location of your clip so that you can easily find the clip you want with your keypad.

(continued on page 38)

(continued from page 35)

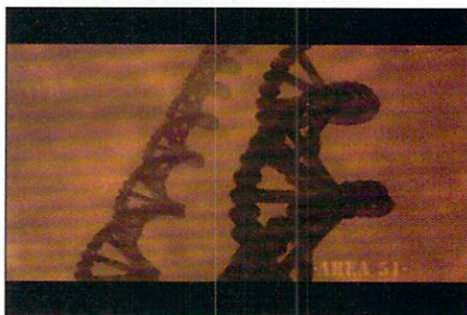


Figure 5

alone. Click OK and then Make (or Enter). Press [a] to show the whole ball.

To make a dome we need to remove the bottom half of the ball.

1. In Polygons Mode, go to the FACE VIEW and set your cursor at (X: -120m, Y: 15m). Make a mental note where that position is on the left

side of the ball and click and hold the right mouse button. Still holding the right mouse button, make a loop under the ball and up to the right side in roughly the mirrored position that you started at on the left side. If you did not go inside the ball at any point in your journey to the right side, when you release the mouse you should have a display that

looks like Figure 6. Press [x] to cut the selected polygons. Since we are going to be inside the dome, let's flip the polygons [f] so they point inside. Name the dome surfaces [q] "dome" and turn smoothing on. Save this object [shift-s] as "Dome.lwo" in the same area you put the DNA and clear out Modeler [shift-n].

Creating particle clutter will finish off the object creation phase. To make the clutter, we are going to use two macros. In the Objects Custom menu we will use Primitives to make a random point distribution and in Tools Custom we will use Points2Polys. We will create three different particle size objects to add diversity to the scene as well as aid in depth queuing.

8. Open the Objects Custom menu and drag down to the Primitives macro. Select Random Points and click OK. Enter 500 as the number of points, select Sphere and Falloff, then click OK. To make the particles fit in our scene we need to scale [shift-h] them up a bit. Press [shift-n] to bring up the numeric requestor and enter 9,999 for the scaling factor. Size the view to show the whole object [a] and place the cursor at the origin in the left view and rotate the object counterclockwise [e]. The distribution should be aligned vertically and look something like Figure 7. Since this is a random distribution it will not look exactly like Figure 7, but close.

FlyingHigh

(continued from page 37)

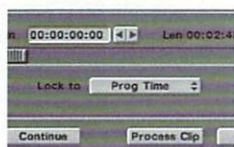


Figure 2: Changing "Lock to" to "Prog Time" is the secret of being able to play audio clips without a video crouton having to be present.

So if I highlighted clip 5 on Row 10, the number would be 10.5. Now I can go anywhere I want and return to that clip by hitting the "1", "0", ".", "5" (10.5) on the keypad and it will immediately go to that clip! In rows 1 through 9 you don't even have to hit the period key! All you have to do to go to Row 9, Clip 4 is to hit "9", "4."

Bypass Cut Clips

Did you know that you can record a clip and bypass the Cut Clips panel and Process message all together? Start recording your clip. When you come to the point you want to stop, instead of hitting the Stop button, hit the Enter key on your keypad. The clip will automatically stop and be processed to your drive! Immediately go to your drive, find the clip called "Last Clip Made...Uncut" and change the name by highlighting it, pressing Controls, and inserting a new name!

QUESTIONS

Q: Your column and book are great, however I can't find any information on how to join projects together. Is it possible?

A: Yes, it is possible! In the Views mode on your middle tool bar, you'll notice an option that says Project/Project. This is the command you use to append one project to another. Before selecting this, first load the main project that you want to add to. Now select Project/Project. You will be prompted to load another project. Double-click on the project you are going to add and it will load into the bottom screen. Now you can drag up the icons you want (or the entire project) to add to your main project in the upper window. Another great use of this command is for backing up files. If you have a bunch of small projects, you can back them

up onto one tape by appending one project after another into the main screen, then giving it a new name. Move your project icons between each project so that it will be backed up, too.

Q: Is there a keystroke I can use to get rid of an entire line? For example, whenever I go to cut a clip I just recorded, I always have to erase "Newclip.01" which takes hitting the backspace key 10 times. Is there an easier way?

A: Hold down the Right-Amiga and "x" key and the whole line will be erased! Shift plus Delete will do the same thing.

Q: I use my Flyer to create TV commercials and it works great. I'd like to also use it to create radio commercials, but having to put each audio clip after a blank video clip and matching the times is unacceptable. Do you know if

9. We can now make the points into polygons. Open the Tools Custom menu and drag down to the Points2Polys macro and release. You should now have 500 polygons in your layer. You can verify this by activating Polygons mode [ctrl - h] and getting statistics [w]. Assign these surfaces the name "Large Particles" in the change surface panel [q], and save [shift - s] the object as "Particles_Large.lwo."

Two more densities of clutter will put us in good shape. These clusters will be of increasing density.

10. Repeat the steps we just went through and create a clutter object with 750 polygons. Name the surfaces "Medium Particles" and save the object

as "Medium_Particles.lwo." The final clutter object should have 1,000 polygons with a surface name of "Small Particles." Name it "Small_Particles.lwo."

During our next class session, we will move over to Layout to start surfacing our objects and lay the foundation for the final animation phase. For the adventurous, I invite you to examine Figure 5 and work on using the elements we have created to build the scene in advance!

My email box has changed to Uberscott@uberfx.com. I look forward to hearing from you and getting suggestions on how this column can better meet your needs. I also look forward to meeting you at NewTek Expo 1997 where I'll be teaching a class or two.

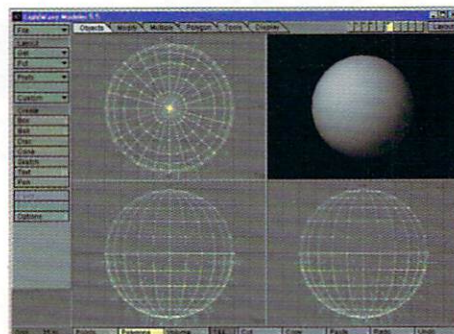


Figure 6

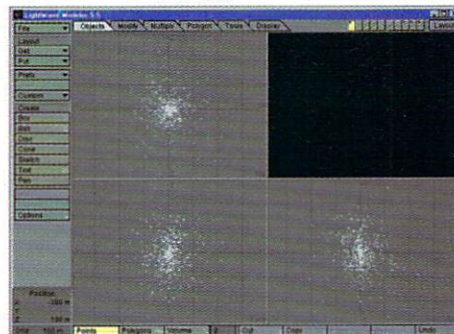


Figure 7

NewTek plans on allowing you to play just audio clips for those of us who own advertising agencies and need it for radio commercials too?

A: You can do it now! Follow these steps (outlined in the *Flyer Mastery Guide*):

You can create awesome audio projects with audio-only clips. This is great for those doing radio commercials or authoring music CD-ROMs with the Flyer. To accomplish this, do the following:

Step 1: Move the first audio clip that will play to your program screen.

Step 2: Highlight the audio clip and select Controls.

Step 3: Next to Lock To, change it to Prog Time (Figure 2).

Step 4: Move your second audio clip into the Project window. Change the Lock To also to Prog Time.

Step 5: Set the Start Delay of your second audio clip to come in where you want it to.

Step 6: Now play the project back and it will play the audio-only clips according to your specifications!

Q: What are the two extra inputs on my Flyer card for?

A: Figure 3 shows the back of the Flyer card. The two at the right (Video In and Y/C In) are for use with the rumored Flyer TBC card that NewTek is allegedly working on. NewTek will neither confirm nor deny that it is working on a TBC because of its policy of not introducing a product until it is almost ready for shipping.

Q: I just installed Flyer 4.2 and now when I try to render a scene in LightWave, nothing shows on my program monitor.

A: Enter LightWave. Open the Record panel by pressing

Record in LightWave's top panel. You'll see the first option in this panel is Render Display. It most likely says "none." To change it, put your cursor over the scroll down box and hold down the left mouse button. You will see four options appear. Highlight Video Toaster (Figure 4) and let go. Now you will see the image on your monitor when you render it!

In the next column, I'll try to expand upon the basketball tutorial we did last time and I'll also show you how to make a clone of yourself in the same video clip. Until then, may all your flights be safe and fun!

Joe Tracy's Flyer Mastery Guide can be purchased for \$63.95 by calling Studio Visions at (800) 672-1880. For information, visit www.studiovisions.com, or email Tracy at jtracy@main.rosenet.net.

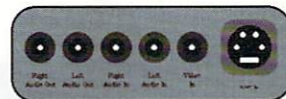


Figure 3: Diagram of the Flyer I/O. The Video In and Y/C In connectors have not yet been enabled and are apparently planned for use with a rumored TBC daughter card.



Figure 4: Video Toaster must be selected in order for you to see your rendered images.

BY PATRIK BECK

Attack of the Retro Flying Saucer! THE FIVE-MINUTE UFO

A good-looking usable object can be created quickly using simple geometry and basic Boolean operations.

Sometimes it is fun to see how fast you can whip out a good-looking usable object. One morning I got it into my head that I needed a really cool retro UFO. I needed something that looked like it came from *Attack of the Flying Saucer* as colorized by Ed Wood. I thought that it would be fascinating to see how quickly such a UFO could be created from simple geometry and basic Boolean operations, but my wife just thinks that I need to get out more.

Building With a Ball

1. Enter Modeler. All the numerical values that I state

for the construction are figures I plucked out of the air and are not critical, but if you use these values you will come out with an object exactly the same as the one pictured.

2. Select Ball in the Object menu and then Numeric to enter the values for a sphere four meters tall and 10 meters wide and thick. The values are:
Sides = 50
Segments = 20
Center X = 0, Y = 0, Z = 0
Radii X = 5m, Y = 2m,
Z = 5m
3. Click OK and then hit Return to create the ball object. It will

be roughly the shape of a plain M&M (see Figure 1). If it seems too big, go to the Display menu and select Fit All.

4. Select Copy at the bottom of the screen to copy the ball object. At the top of your screen select one of your unused layers in the first column and select Paste to put it there for later use. Now go back to the original layer.
5. Go to the Polygon menu and select Surface. Type "Rim" and click Apply. You have named the polygons in your object "Rim." Remember that when no polygons are selected then all polygons are selected when assigning a surface name.

the second row to put the Rim object in the background (the Rim should be colored black symbolizing it is in the background). We will now use the Boolean command Subtract to get rid of the bottom half of our UFO.

7. In the Objects menu select Box. Move the cursor to the Top view and draw a box around the Rim object. Now move your cursor to the Face view and click once below the object on the right side (see Figure 2).
8. Hit Return to create the box.
9. Go to the Polygon menu and select Surface. Type "Bottom" and Click Apply.
9. Click on the box in the top layer that contains your original Rim object. Now click on the box in the second layer directly under the box that contains your Bottom object. You have reversed the screens

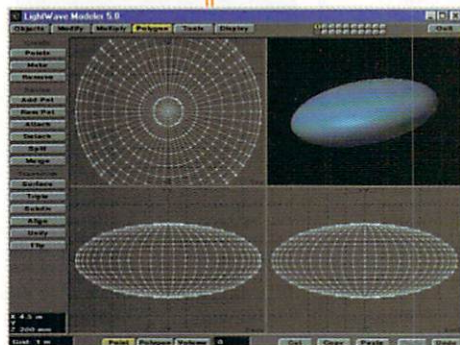
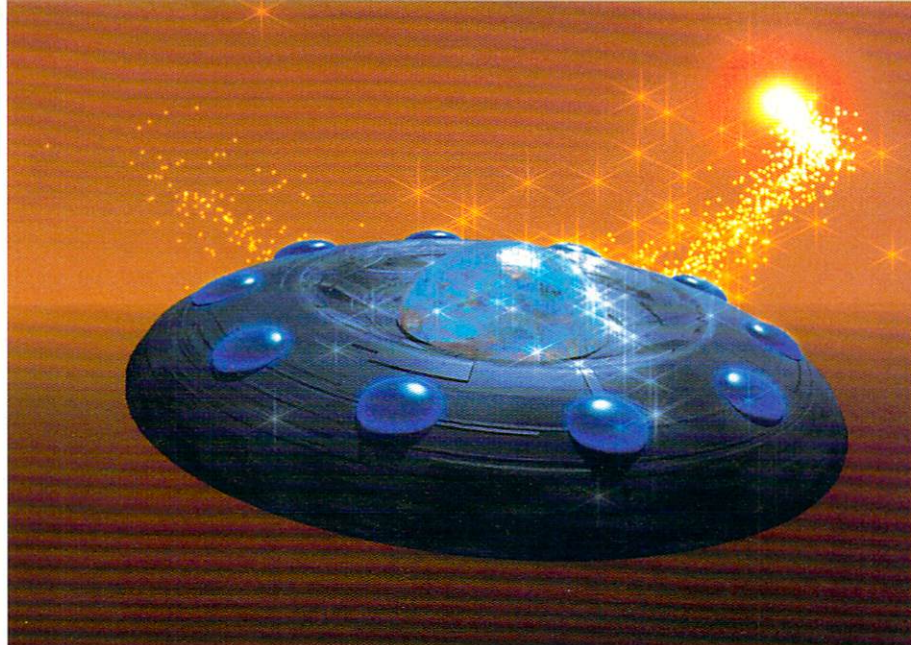


Figure 1

Slice and Dice

6. At the top of the screen select an unused layer (one in the first row without a dot in it). Select the first box in



After building the UFO, you can assign it surfaces to give it the look and style you desire.

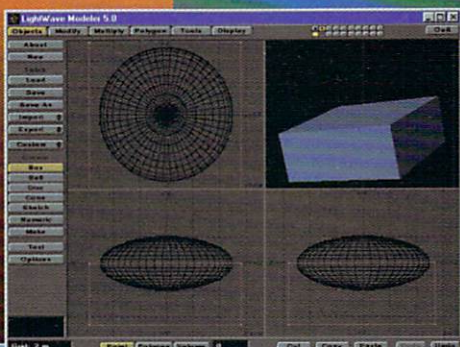


Figure 2

10. Go to the Tools menu and select Boolean. Click Subtract if it isn't already highlighted and click OK. You should now have an object that looks like half a yo-yo (see Figure 3).
11. Hit the M button on your keyboard. Click Automatic and hit OK. By doing this, you merged the points that sometimes get left over when Boolean functions are used.
12. Select the layer in the top column that contains the Ball object we copied in Step 4. Go to the Polygon menu and select Surface. Type "Cockpit" and click Apply.
13. Go to the Modify menu and select Size. Click Numeric and enter "0.5" in the Factor box. Click OK. You've reduced the object size by half. Select Move then click Numeric. Change the Y axis to "2m." Click OK.
14. Click on the box in the top layer that contains the UFO object (formerly your original Rim object). Now click on the box in the second layer directly under the box that contains your Cockpit object. Go to the Tools menu and Select Boolean. Make sure that Subtract is highlighted and Click OK. This operation takes a few more seconds than last time due to the curved surfaces. Hit the M button on your keyboard. Click Automatic and hit OK (see Figure 4).
15. Now we'll create a sphere in the center. Select an unused layer in the top layer column. From the Objects menu select Ball and then Numeric. Enter the following values (see Figure 5):
Sides = 30
Segments = 10
Center X = 0, Y = 0, Z = 0
Radii X = 1.5m, Y = 1.5m, Z = 1.5m
16. Click OK and then hit Return to create the sphere.
17. In the Modify menu select Move and then Numeric. Change the Y axis to "1.5m." Click OK.
18. Go to the Polygon menu and select Surface. Type "dome" and click Apply.
19. At the bottom of the screen select Copy. Select the box in the top layer containing your main UFO and at the bottom of the screen select Paste. The UFO is starting to look pretty good (see Figure 6)!

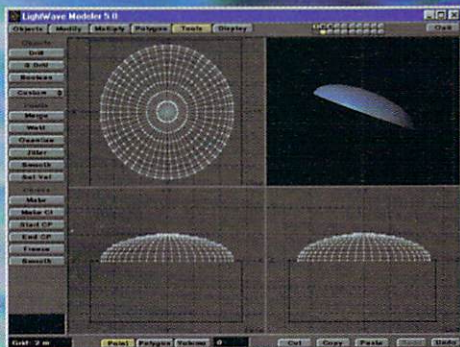


Figure 3

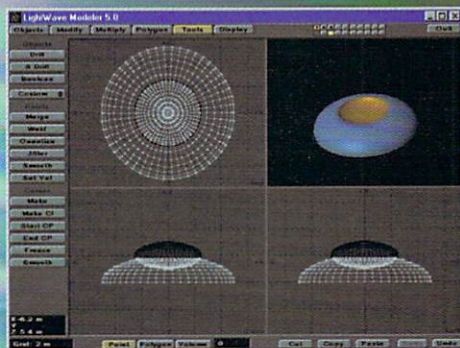


Figure 4

How About Some Windows?

20. We're back to making balls again! Select an unused layer (top row). In the Object menu, select Ball. We will create a ball with a 0.5-meter diameter. Select Numeric and change all the values in Radii to read "0.5m." Click OK then hit Return. From the Polygon menu select Surface, name the object "Window" and hit Apply.
21. Go to the Modify menu and select Move then Numeric. Change the values in Y

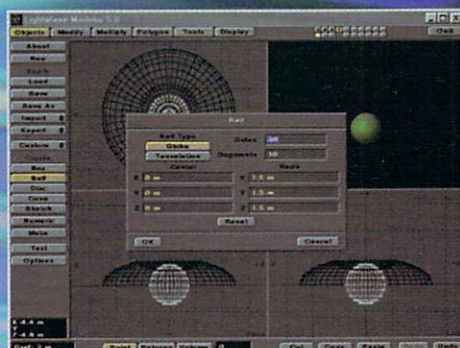


Figure 5

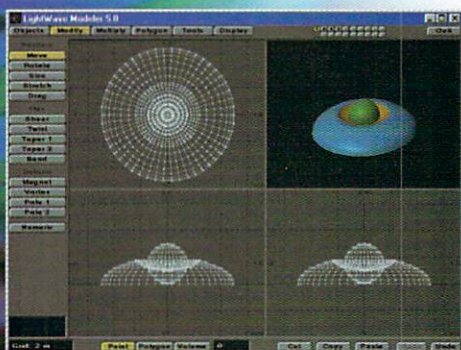


Figure 6

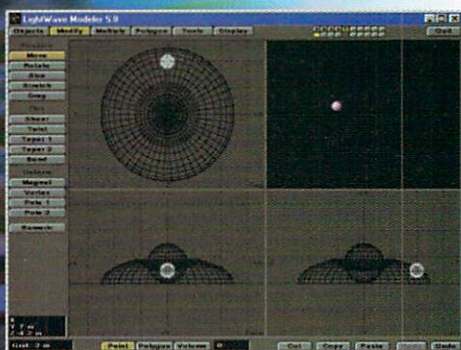


Figure 7



Figure 8

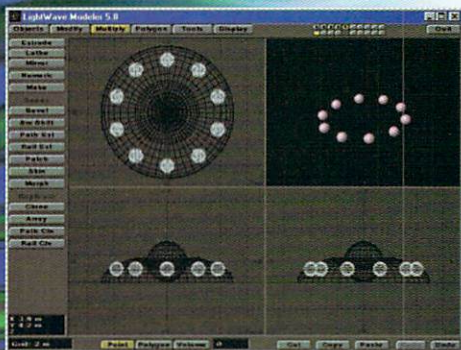


Figure 9

and Z to read "Y = 1m" and "Z = 4." Click OK (see Figure 7). With the UFO object in the background (second layer), you can see that the window sphere is just on the edge of the curve (also Figure 7). We want a bunch more of these so we will use the clone tool to space them equally.

TIP: I have noticed a reluctance by many Modeler users in using the Clone and Array tools. This is probably because duplicate objects have a tendency to take off in unintended directions. Do yourself a favor and spend a few minutes duplicating some simple objects to get the hang of it. Once you get a mental picture of how they work, you will find them very useful.

Cloning Windows

22. With the Window object in the active layer, go to the Multiply menu and select Clone. We want 10 equally spaced windows in a circle, so the number of clones will be nine (the original makes the 10th). We have to calculate the degree of rotation for each of the balls to have them equally spaced over 360 degrees of a circle. Using 10 windows (balls) makes the math easy. 360 divided by 10 is 36 degrees per clone. For Number of Clones, enter 9. Because the degree of rotation for each clone is "36," enter 36 on the Y rotation axis (see Figure 8). Click OK.

23. Copy the resulting ring of window balls and paste them into the layer with the UFO object (see Figure 9). Save the finished object as UFO.

Giving Your UFO Surfaces

You could easily spend most of a day tweaking the surfaces of this object in LightWave. Here are some suggestions to get started:

- Turn smoothing on everything. Other than that, it is up to you to interpret what a UFO is supposed to look like.
- For a '50s style ship, use strong solid contrasting colors for each of the surfaces and give them all the same amount of shininess.
- For the space opera look, load the different metal surfaces from the surfaces drawer at random and turn on Glow.
- To get that really hip "Babylon 5" look, create a brush consisting of a bunch of overlapping gray squares and use it as a diffusion map. The same brush mapped the same way as a bump map gives it added depth. Use Fractal Noise as a Specular texture with glossiness set on low. This gives the object a grungy appearance that adds to its realism.

Flight School

The one thing we know about flying saucers is that they spin. Giving an object a consistent spin while moving it about the scene is a difficult thing to do unless you use nulls. Create a key frame for the UFO with both the move and rotation values all at zero. Hit the "+" key with "Object" selected as the Edit Item to add a null. Parent the UFO to the null. Create a key frame for the UFO at the last frame of the animation with some "H" rotation. Now, when you want to position or rotate the UFO in Layout, do it by moving/rotating the null object and keying it in the proper place and the rotation of the UFO will never have to be adjusted (see Figure 10).



Figure 10

Doing It Right

Technically, when we did a cut and paste for the spheres that were the dome and ring of windows, we should have instead done an "add" Boolean operation. The failure to do this might cause rendering errors because of the intersecting polygons. By using the paste function it allows for the simple adjustments of the different elements of the UFO. In Modeler you can use the Select Connected function to quickly isolate the dome or windows and reposition them after you have done a test render of the complete surfaced object.

It is inconceivable to me that anyone who likes using LightWave would not want to spend some time building UFOs. The steps I described are just a starting point. The polygon that makes up the bottom of the craft consists of a single polygon and could easily be given a sloping edge by using the bevel tool. The window balls look really cool if you flatten them a bit and tilt them to match the slope of the ship. Don't forget the anti-gravity units and the abduction chambers.

If I had not set a time limit, I probably would still be at it, adding doors, engines, and flower boxes. Maybe my wife is right, I do need to get out more.

Patrik Beck is the owner of Electric Crayon Studio and has been writing about Amigas, video, and animation for several years. He is hard at work on his first book, "LightWave Explained," and will be a teacher at NewTek Expo 1997. He can be reached via email at zippie@execpc.com. Check out www.studiovisions.com/newtechniques to enter the Five-Minute UFO Contest.

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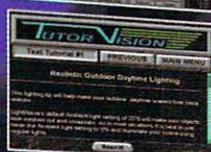
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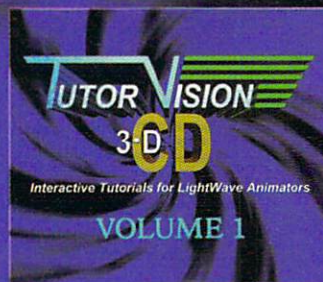
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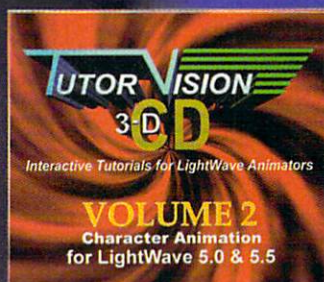
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Tutorial

A STEP-BY-STEP GUIDE TO CREATING MORE PROFESSIONAL PRODUCTIONS

BY CHRIS SEILER

Modeler 5.0 and MetaNURBS LIGHTWAVE CHARACTER BUILDING

Setting up proper bone structure is the key to bringing a character to life when animating body movement.

In this tutorial, we're going to cover some of Modeler 5.0's new features, including MetaNURBS, and the setting up of bone structures to bring a character to life. We'll also offer some tips for problems encountered when moving objects that are parented to other objects with bone movement. Here's an example that will help you understand:

Assume that you have a character modeled and ready to animate. Each object has its own bone structure including a body object, arm objects, lip objects, eye objects, and even a hair object.

when bones are deforming. We'll study some workarounds for later. For now, let's start creating!

Making People Parts

Although the color image in this tutorial shows a completed character, we're going to model just the arms (it would take several tutorials to create it all).

Point-by-point coordinates will try to be avoided in this tutorial. You need only come close to the sample Modeler screens in order to follow along. Be sure to learn the keyboard shortcuts I include. It makes modeling much faster.

views, Zoom (, key) into the end (positive Z) of the box just created. Select the inside top-right polygon (positive X) and the top second-from-end polygon (Figure 2).

5. Press (b) and in the resulting Bevel requester, type 0 for inset and 10cm for shift. There's your rough thumb and first finger. Select the points at the tip of the thumb and with the Stretch tool, size them down to taper the thumb tip. Do the same for the first finger tip.

6. Select the inside middle polygon (for the middle finger) and repeat the same steps. You must Bevel (shift only) each finger one at a time, otherwise you can't select the points at the end of the finger tips for shrinking them down without selecting points from the other fingers.

7. Use the Drag tool (Modify menu) or the Move tool (t) and arrange the points into a shape that resembles Figure 3. Pretty ugly, eh? There are non-planar polygons all over the place! Don't despair. Activate MetaNURBS (Tab key) to see what your body shape is going

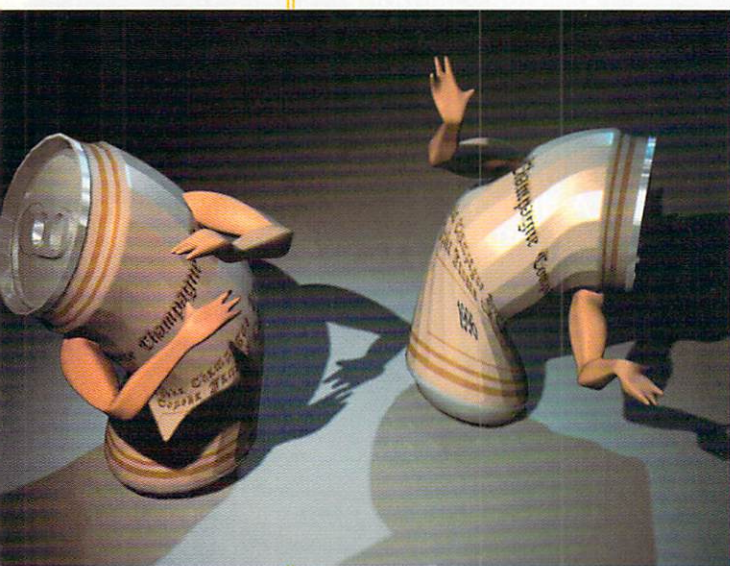


Figure 9: The figure on the left is positioned for frame 30. The figure on the right is positioned for frame 60. Rotate, Pitch, and Bank the arm bones to match the figures. Key frame at frames 30 and 60 respectively. (See steps 28-30).

Now you parent all objects to the body object so when the body moves everything moves (so far so good...). As you begin deforming the body into new shapes with its bone structure, you'll notice the problem. None of the other objects is moving along with the body even though each is parented to the body! This is because those objects won't track the main body



The CanCowboy character (with 32 bones) talks about his Hot Rod Car. It was rendered on a 133MHz Pentium, with 64MB RAM at 2560 x 1920.

to look like. You can continue to work the shape in the MetaNURBS mode, though at times it can be tricky to find exact points to be moved. Try toggling the Tab key on and off while you work. When you're happy with the hand and arm shape, go to the Options panel and set Patch Division to 3. Press Ctrl-d to Freeze the MetaNURBS body into a renderable polygonal model.

8. Now we'll create a small curve at the top of the arm where the shoulder will be. With the Lasso (right mouse button), select the last eight segments of polygons. Select the Bend tool (Modify menu) and from the face view click in the center of the object and drag to the right bending the arm about 45 degrees. (*Tip:* to constrain the bend to just the X axis, hold down the Ctrl key while dragging the mouse, or you could Undo, press (n) and type in exact coordinates). Finally triple (shift-t) it, and save this object as armR.lwo.

9. Select Mirror (Tools menu) and mirror it on the right side. Select the entire arm you just mirrored, Cut (x) and Paste (v) into another layer and Center it. Save this object as armL. The final arm shape in my image looks like Figure 4.

You did it! Hopefully this gives you an idea of how to work with MetaNURBS. You can use all of Modeler's tools to assist in shaping the simple form. Now enter Layout and don't forget your arms!

Muscle Flexing/Bone Building Fun!

First we're going to build the bone structure in the arms. For 5.0 users we'll use Muscle flexing and Joint Compensation features.

10. Load your two arm objects into Layout.
11. Go to the Scene panel and in the Scene overview, hide the armL.lwo by clicking the small gray box next to the object's name. Press (p) to close the panel.
11. From the Edit functions select Object, then Bones. Press the (+) key to add a bone. Rotate the bone 120 degrees on heading (easier in the numeric requester) then select Rest Length and reduce it to about .90. Use Figure 5 for a reference position (use the top and side views to make sure the bone is positioned correctly). key frame it (press Enter twice) at frame 0. This first bone will act as an anchor to hold the arm in place when the other bones are moved.
12. Press the (+) key to add another bone. Reduce this bone's Rest Length to .670. Move the bone in-Z axis to just touch the tip of the anchor bone and key frame it.
13. Press (p) to open the Objects Skeleton panel. Select Scale Strength by Rest Length (SSRL - 5.0), select Joint Compensation for Parent (JCP) at 100 percent, select Muscle Flexing (MF) at 200 percent (look out Arnold!) and leave all else at default settings.

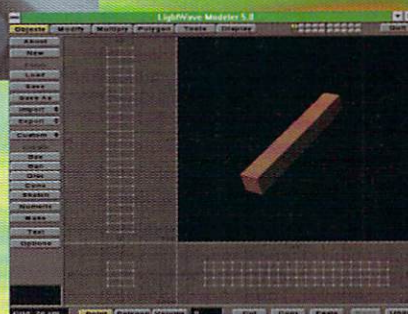


Figure 1: Simple multi-segmented rectangle.

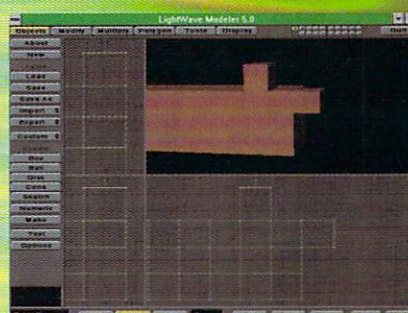


Figure 2: Rectangle with selected polygons beveled with shift only.



Figure 3: Hand and arm created by moving points around into rough pre-MetaNURBS shape.

CHARACTER ANIMATION IN ACTION

By Brian Tatosky

Striking down the idea that "it's just for starships and space battles," LightWave's character animation features have evolved into a solid package, especially with the availability of Puppet Master and the addition of Morph Gizmo.

At OCS/Freeze Frame/Pixel Magic, animators are concentrating on the artistry, not the technicalities of character animation for *Casper: The Beginning*, a direct-to-video movie release for Saban and Fox Home Entertainment. Using hand-modeled (not digitized) versions of our familiar pleasant poltergeist and friends created using MetaNURBS and Metaform, the majority of character work is being animated with tools available right now, such as Metamotion, Bones, and Puppet Master.

Starting with a handful of artists, some completely new to LightWave, OCS has achieved a level of quality thought only possible from software costing five to 10 times more.

The original 40 minutes of ghosts in *Casper* were animated over two years by ILM's largest animation team. With the same quality standards in mind, OCS' 16 LightWave animators have undertaken 35 minutes of spectral sights and ghostly delights, five of which are full CGI, in a span of just over six months.

The key ingredients to OCS' success: Talented artists and LightWave 3D.

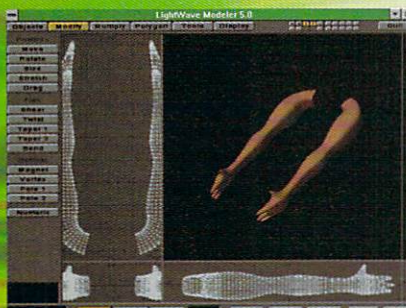


Figure 4: Both arms after final Freeze (Ctrl-d) shape from MetaNURBS.

14. Go back to Layout (p), and with that bone selected, press the = key to add a child bone. Set its Rest Length to .36 (or slightly smaller), position it and key frame it.
15. Open the Skeleton panel (p) and select SSRL. Select Joint Compensation (JC) at 300 percent, JCP at 100 percent, MF at 100 percent, and Muscle Flexing for Parent (MFP) at 100 percent. The Skeleton panel offers greater control over earlier versions of bone functions. You should experiment by using different values for JC, JCP, MF, MFP and view the results in Layout with the OpenGL feature.
16. From Layout, press the = key again to add another child bone. Reduce the Rest Length, position it, and key frame it (Figure 5). Go to the Skeleton panel, select SSRL, JC 100 percent, JCP 100 percent and MFP 400 percent (these values are from trial and error; adjust them as needed). We've added an anchor bone, upper arm bone, forearm bone, and hand bone.
17. Select bone 4 (hand bone) and press the = key. Position this child bone inside the thumb (again keep an eye on the top and side views for precise placement), reduce Rest Length and key frame it.
18. Add three more child bones to the hand bone (Bone 4), reduce Rest Length, position them into the remaining fingers, and key frame them. This arm's bone structure is complete!
19. Go to the Scene panel and select Show All Objects as Full Solids (bottom left corner), then hide the armR.lwo and its Bones. Repeat this process for the other arm. Remember the bone structure parenting order! There are just a couple of steps left to complete this scene.
20. Load a Null object (with Objects selected, press the + key). Go to the Objects panel and rename the Null by selecting Save Object and type in ArmsNull. Parent both armR and armL to ArmsNull. Move the arms apart in the X axis (Figure 6) and key frame them.
21. The last step is to make the bones active by selecting each bone and pressing the (r) key. Save the scene as Arms.lws.
22. Now we need a body figure for our arms. Select Clear Scene. Load the Cow object... just kidding! For this tutorial, let's really use the POPCAN.lwo found in your Food directory. For best results, you should go back into Modeler, load the POPCAN, select the can's center polygons, run Subdivide (shift-d) Faceted two or three times, and Triple (shift-t) the whole object. Save it as canbody.lwo. We need the extra geometry because we're going to be deforming the can back in Layout.
23. Go back to Layout (Alt Tab for Intel). Load the canbody.lwo, add a bone, name it bottom, increase its Rest Length (Figure 7), position it at the bottom center of the can, and key frame it at frame 0.
24. With the bone selected, press = to add a child bone. Name it center and reduce the Rest Length to slightly smaller than the bottom bone. Move it up in the Y axis, forward in the -Z axis to about the center of the can (Figure 7) and key frame it.
25. Add a child bone to the center bone, name it top, position it at the top center of the can (Figure 7), and key frame it.
26. Select each of the canbody's bones and press (r) to make them active.
27. Go to the Objects panel, select Load From Scene and load the Arms.lws that you just created (choose no to the Load Lights From Scene prompt). In Layout, Parent the ArmsNull.lwo to the canbody.lwo. Move the ArmsNull (which moves both arms and their bones) up to about shoulder height on the canbody. If the arms are too big (or small) for the can, just Size the ArmsNull to the appropriate proportions. Rotate the ArmsNull Heading to 180 degrees and key frame it at frame 0. Pitch both arms down to -30 degrees (Figure 8) and key frame them at frame 0. Save this scene as Candance.lws.

This might seem like a lot of setup, but when you get the feel for it, both these scenes could be accomplished in less than 10 minutes!

Tutorial

Let's Add a Little Life!

Remember the problem that I mentioned earlier in this tutorial? Try Rotating the center canbody bone to 45 degrees in Bank and you'll see that the can bends but the arms stay in place.

There are several options to fix this tracking problem. The best one (even though it doesn't work on all machines) is to use the PARENT.P plug-in that comes with 5.0 (make sure you've loaded the PARENT.P plug in from the Options panel). Select ArmsNull, press (m) for motion graph from the Motions Plug-ins requester pull-down menu, select the Parent Bone plug-in, from Options select Parent to center (bone) of Canbody.lwo. Now the ArmsNull should track the movement of the canbody as it's being deformed.

Another solution that I used involves a little more work but with good results. First let's set up a 60-frame move for our character.

28. Select canbody's center bone, click Rotate, press (n), and in the numeric requester type H= 0, P= 0, B= 45 and key frame it at frame 30. From the numeric requester type H= 45, P= 20, B= -45 and key Frame at 60 with a spline tension of 1. Select top bone, click rotate and press (n) and type H=20, P=0, B=30, key frame at frame 30, from the numeric requester type H= 20, P= 20, B= -30 and key frame it at frame 60 with a spline tension of 1. Make a wireframe preview. The can should bend to the left and back to the right with a little pitch forward. If our PARENT.P plug-in works, the arms should move along with it, otherwise they remain motionless as the body moves through them.

The fix is to, from the Skeleton panel, add a child bone to the center bone, press (p) and deselect Bone Active. This bone is now dormant and because it's parented to the center bone it moves right along with it. Back in Layout, position it so that the fat end of the bone lines up exactly with the ArmsNull. Zoom (. key) in very close and you'll notice that inside the fat end of the bone, there are cross hairs that look like a null object. Use this to line it up with the ArmsNull and key frame it.

29. Now go to frame 30 and line up the ArmsNull with the dormant bone (should

be banked over) and key frame it. Do the same for frame 60. Try a wireframe preview now and the arms should be tracking along. If the animation was several hundred frames, all you would have to do for every key frame the center bone has is line up the ArmsNull with the dormant bone and key frame it (remember to include any Spline attributes of the center bone). We're using the ArmsNull to track the dormant bone with key frames.

The arms are tracking but they need some life! Check out Figure 9 (same character placed side by side in the same scene). The character on the left is in the position for frame 30 and the character on the right is in the position for frame 60. It's time to try bone coordinates on your own!

30. Go to frame 30, position each arm bone to simulate the posture of the character on the left, and key frame them. Keep in mind that only Rotations H, P, and B will be used to move the bones. Go to frame 60, position each arm bone to simulate the posture of the character on the right, and key frame them. Save the scene.

Experimenting is the Key

Experiment by simulating some human-like movements. Look at yourself in the mirror and try throwing a ball (not a real one), or just put your hands up to your face, study the movement, break it down into steps, and start working out the bone movements in LightWave. Try adding some eyes and a mouth to this character to make it more convincing.

Hopefully this has helped you become more familiar with building and working with bone structures. There are more ways to set up bone movements with LightWave's IK (Inverse Kinematics) that in many ways simplify things. For great animation resources, check out the *LightWave Power Guide* by Dan Ablan and be sure to tell fellow LightWavers about *NewTechniques*. Until next time...may all your renders be fast!

Chris Seiler owns Burning Visions Productions in Delray Beach, FL, and has written several magazine tutorials on *LightWave*. He can be reached at bvisions@millennium.net.

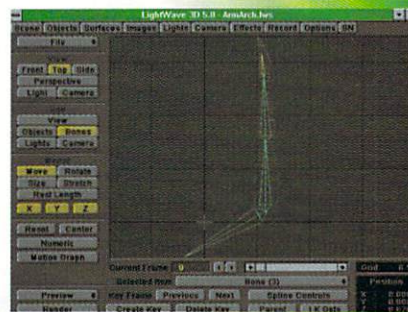


Figure 5: Top view of Right arm with arm bones in position. (Note: The arm object has points only selected from the scene overview panel for ease of visibility).



Figure 6: Both arms are parented to a Null and moved apart in the X axis with all bones in position.

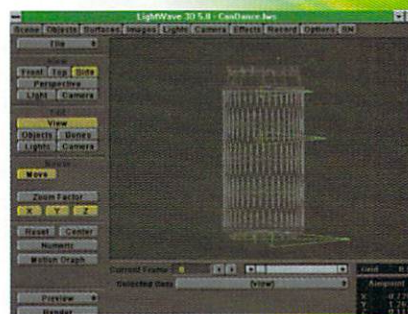


Figure 7: Side view of can (body object) with three bones in place. (Note: The can has partial wireframe selected from the overview panel for ease of visibility).



Figure 8: Arms loaded into can (with Load From Scene) with ArmsNull rotated 180 degrees and parented to the can object. Each arm is pitched down 30 degrees.

Tutorial

A STEP-BY-STEP GUIDE TO CREATING MORE PROFESSIONAL PRODUCTIONS

BY THOMAS
FEDORYAK

Thinking a technique
through first can
sometimes help you
find the path of least
resistance in
LightWave 3D.

Highlander III LightWave Titles THERE CAN BE ONLY ONE...

How many ways are there to create a given effect? Most professional animators will agree that there is always a difficult way. Fortunately, there is usually an easier way, too. What's ironic is that the hard way is often easier to find!

That's why it is worth thinking your technique through before you begin.



Figure 1

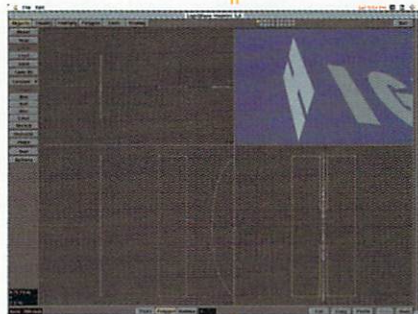


Figure 2

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This brings me to a little story about LightWave 3D. Every once in a while, someone asks me how the main title for the film *Highlander III* was created. The approach is worth describing, since the same time-saving technique can be applied in a number of other situations.

The basic concept for the main title was simple. The individual letters start out facing sideways, appearing as a series of thin vertical lines. The letters begin to turn, gradually spinning around to face forward, revealing the fire and brimstone within....

I didn't have to worry much about the effect within the letters since the flames had already been shot live on set and would be fairly

easy to composite. But what about the movement of the letters? A flat polygon rotating on its axis provides exactly the right effect, except that in this case each letter would have to rotate on its own respective axis. This is simple enough to describe, but potentially troublesome to animate—especially when you have more than a couple of letters to deal with.

One obvious way to achieve this type of effect would be to use the object rotation controls in Layout. That would involve splitting the title into many separate objects, however, and saving each and every letter individually. Also, each letter would have to either be re-centered in Modeler prior to saving or have its pivot point re-centered in Layout. In addition, a set of rotation key frames would then have to be created for each of the letters.

As you can imagine, the above method creates a mess of objects,

not to mention the trouble of re-aligning all of the letters in Layout. Furthermore, if you ever wanted to make timing changes to the rotation of the letters, there would be an annoying number of key frames to adjust. Fortunately, there is a much better way to approach the problem.

Morphing Pairs

Whenever you know that a group of objects will be rotating (or otherwise changing) in unison, it is far more efficient to set up two "states" of the group and control the transformation using a single morph envelope.

Rather than spending a few hours using the method outlined above, you can create a pair of morphable objects and adjust their morph envelope in less than 20 minutes.

The first step is to create the target object in LightWave Modeler.

1. Continuing with the example of the film title, click on Text in the Objects menu, choose a font and type away. Center your text object and name its surface any way you like. The entire line of text should then be saved to disk as a single object using an appropriate name (such as Target1.lwo). For the purposes of this tutorial, we'll keep the text object flat (you can experiment with extruding and beveling the text later if you wish).

2. The next step involves creating the source object for the morph. One by one, each letter will be rotated on its own axis (the following short cuts make this quite quick to accomplish). Make sure that you are in Polygon Selection mode, then click once on the first letter and zoom in on your selection (Figure 1).

Note that if you are using extruded fonts rather than flat polygons, make sure to select all the polygons comprising the first letter. Next, without clicking, in the Top view, position your cursor over the exact center of the selected polygon, press "r" on the keyboard in order to rotate that letter 90 degrees (Figure 2), then press "/" to deselect the polygon.

3. You can now repeat the process for each of the remaining letters: Scroll the view sideways to see the next letter, click once on it, and place your cursor over its center. Press "r" and then press "/". Doing it this way is considerably faster than entering the values numerically or dragging with your mouse. Once all of the letters have been rotated to face sideways (Figure 3), save the current version of the object to disk with a different name (such as Source1.lwo). You are now the proud owner of a pair of morphable text objects.

4. Note that there are many variations that you can explore here. For example, scaling each letter to zero on the X axis (rather than rotating on the Y axis) would give you a similar effect when rendered. To get a slightly different type of effect, you could make the letters in the source

object rotate on an axis other than (or in addition to) the Y axis. You can even apply a different transformation to each of the letters. These types of variations will not affect the basic way that the morph works—they only change the way that the letters move during the effect.

5. The main title for *Highlander III* required that a second line of text appear below and shortly after the first line (depending on which cut of the film you see, the second line of the title is either *The Final Dimension* or *The Sorcerer*). Therefore, the process of creating a pair of morphable text objects was repeated for that second line. As before, two objects were saved: one with all of the letters facing forward (Figure 4) and the other with all of the letters facing sideways (Figure 5).

The Envelope Please

6. Enter LightWave Layout and load both the source object and target object. Choose the target object's name in the source object's Metamorph Target pop-up menu (Figure 6). Next, enter the source object's Metamorph Amount envelope panel and create a key frame (at frame 90 for example) so that the morph effect will change over time (Figure 7). You can also adjust the keyframe spline values to get a smoother transition curve (Figure 8). Click on Use Envelope to accept your changes.

7. If you have another line of text to add, repeat the process of selecting the morph target and adjusting the morph envelope for the second pair of objects. Also, it's a good idea to make any target object 100 percent dissolved (Figure 9), since it serves as a reference for the morph and doesn't need to be rendered. When you're done in the Objects panel, click on continue to return to the main Layout view.

8. If you switch to Camera view, you will see that we are almost done. Although the letter in the center of the source object appears as a thin vertical line, the

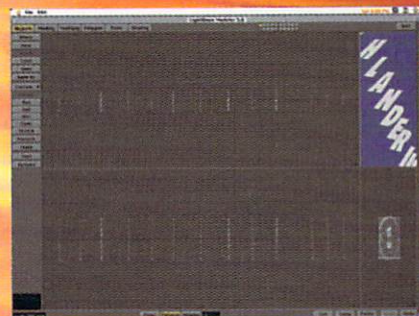


Figure 3

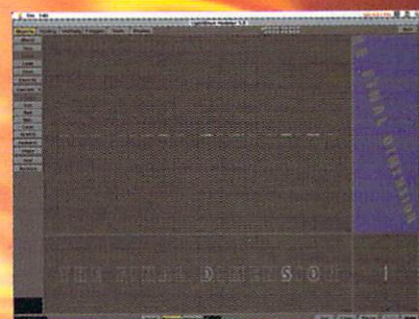


Figure 4



Figure 5



Figure 6



Figure 7



Figure 8

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Tutorial

Highlander III LightWave Titles
THERE CAN BE ONLY ONE...
(continued)



Figure 9

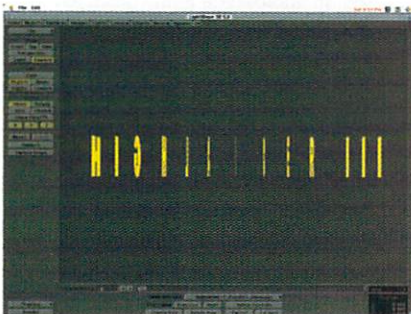


Figure 10



Figure 11

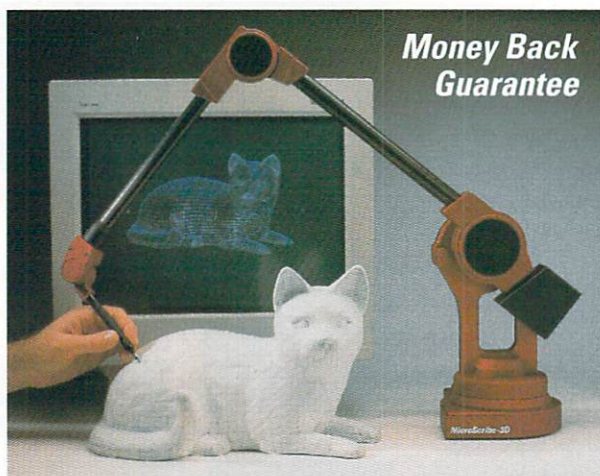
letters on the sides appear to be a little wider (Figure 10). This is due to the camera being too close to the object and the effect of a wide angle of view. To get all of the letters to start as thin vertical lines, move the camera way back on the Z axis (try a value of -400) and create a key frame for it. You will also need to increase the focal length of the camera (Figure 11) so that the now-distant object comes back into view.

That's really all there is to it. The beauty of this technique is that it does not require any object rotation keyframes to be set in Layout. If the rotation of the letters is too slow or too fast, simply adjust the corresponding morph envelope until you are satisfied with the speed. Then texture your objects and render away.

The same single-envelope technique can add ease of control to any group of objects that change in unison, not just text. This technique could be used, for example, to animate the subtle movement of hinged flaps on an air vent, or venetian blinds opening in front of a window, or even the petals of a rose spreading and folding. Keep the principle in mind and you may be surprised how often it saves you some time.

Thomas Fedoryak served as key animator on the feature film Highlander III. He oversees production at Digital Light, Inc., a content creation and visual effects company. He can be reached at thomas@digitallight.com.

Catch Fedoryak at NewTek Expo 1997 where he will be teaching three LightWave courses!



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TOP 10 TIP-OFFS YOU'RE NOT A GOOD ANIMATOR:

Excerpts from forthcoming humor book
"RENDER GUARDIAN!" by Willie Lloyd,
LightWave Animator/3D Humorist, will-mation@aol.com

1. Your computer does not have vocal recognition or artificial intelligence hardware, yet it pleads with you to give up your profession.
2. You think INTER-LACED DISPLAYS are frilly garments seen in Victoria's Secret windows.
3. The frequent Client suicides in your animation viewing suite.
4. You can't figure out why your dangle doesn't have cream filling.
5. When you design custom 3D objects you're only accurate within 358 degrees.
6. You apply complex texture maps to objects with wallpaper paste.
7. Your last customer figured out a way to wrap fish with your demo reel.
8. The FCC passes regulations that restrict television stations from broadcasting any programs containing YOUR animations.
9. Whenever you call to request reference letters from past customers, they begin to curse in ancient Latin languages, causing your phone to levitate.
10. That "Triple-Your-Money-Back" satisfaction guarantee you came up with has put you \$3 billion in debt after three months in business.

Renderers

ARTWORK CONTRIBUTED BY OUR READERS

PATRICK THOMAS "Chaos"

Software: LightWave 5.0 (Intel)

Description: This image was a character concept for a game design.

Phone: (512) 349-2013



FRED TOWNSEND — "Tribute to Ray Harryhausen"

Software: LightWave 5.0 (Mac), Photoshop 4.0, Premiere 4.2

Description: Growing up I was a big fan of fantasy films. One of my favorites was *Jason and the Argonauts* (1963). Since that movie left such a big impression on me, I decided to make an animation reflecting that film. My version takes place in the future aboard spaceships and alien worlds.

email: ftown@earthlink.net



JEAN-ERIC HENAULT — "CityScape"

Software: LightWave 5.0 (Intel) on a 166MHz Pentium running NT 3.51, 64MB RAM, and 600MB paging space, not a bit of which wasn't used.

Description: The image is part of my demo reel that will be introduced this summer. It features a futuristic landscape largely inspired by the megacities we have seen in movies like *Metropolis*, *Blade Runner*, *Batman*, and *Megacity1* in *Judge Dredd*. I wanted to feature a mix of styles, including art deco, modern, and almost gothic.

email: videosep@odyssey.net, phone: (514) 527-0816



FRÉDÉRIC MOREAU — "Survizi"

Software: Created entirely in LightWave without any tricks or image compositing.

Description: This is an illustration from an SF video movie made of pure 3D CG, which I am working on, named *OUTERSPACE*. I hope it will help me to find a job. The spaceships and everything in the pictures are entirely my own work.

Phone: (33) 4 42.26.26.35



KEN BRILLIANT — "Cyclops"

Software: LightWave 5.0 and Fractal Design Painter on a 90MHz Pentium with 32MB RAM. Description: An exercise in building an organic creature using MetaNURBs. email: KBrilliant@aol.com

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Reviews

CANDID OPINIONS ON THE LATEST PRODUCTS AND PLUG-INS

BY DAVE THOMAS

MacroForm 2.0

A collection of modeling tools that expands LightWave 3D's capabilities.

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Circle Number 100

MacroForm 2.0 is a collection of modeling tools that greatly expands the capabilities of LightWave 3D. The package is simple to install (just copy to the appropriate directory) and is added to Modeler like any other plug-in.

The package has two different tool sets. The first is Productivity Toolz, which consists of a series of tools to make your modeling tasks easier. Among the functions are Align & Center, which allows objects in the foreground to be aligned/centered/sized to objects in the background, or background to foreground, or along any axis. The Dimension command reports the size of an object, and lets you scale it using real world values. Also, Slice & Dice allows you to easily add new geometry to an object with slicing in a number of ways (including Linear, Radial, and Bi-Directional) in preparation for other modeling tasks like MetaForm or MetaNURBS. These and other Productivity Toolz add a lot of functionality to Modeler, and you'll soon be wondering how you got along without them.

The other set of tools is the RailToolz. These tools use curves in a background layer to effect an object in the foreground layer. The curve can be user-created, or generated by the program. By adjusting the curve, you can perform operations like Bend, Twist, Scale, and Stretch on an object. There are also functions for Extrusion and Routing of objects. Some functions allow the use of a Control curve that determines the strength the other curves will have on an object. What's amazing is using these functions in Apply mode, where changes made to your curves are reflected in the object as you make them. It's a lot of fun just experimenting with curves, coming up with all sorts of odd and unique shapes. Each of the various Toolz have a bunch of parameters for very exact control, which makes it easier to get the results you're looking for. The power of these tools is amazing, and while it takes a bit of time to learn them,

these functions will allow the creation of objects that would be much more difficult to create with the standard Modeler tool kit.

Special mention must be made of the documentation. The folks at One and Only Media have done something very different with the manual. Titled "3D Modeling the Natural Way," this document goes far beyond the usual software reference manual, acting as a textbook on the art of 3D modeling. The first 11 chapters are designed to get you to think about and visualize the 3D modeling process. There are exercises to get you to think about different visualization techniques, and discover new approaches to making 3D objects. This section is very different than anything I've ever seen in a piece of software documentation, and would probably benefit any 3D artist, not just LightWave users. The rest of the manual contains a number of well-written tutorials that will get you up to speed with the program, as well as the usual reference materials. This is an interesting approach to take with a software manual, one that will really benefit those with little or no 3D modeling experience.

When combined with the tools already contained in Modeler, MacroForm 2.0 gives you one of the most powerful modeling environments available on a desktop computer platform. The power of combining native Modeler tools like MetaNURBS and the interactivity of the MacroForm tools is an amazing asset to any LightWave user. I cannot recommend this package enough.

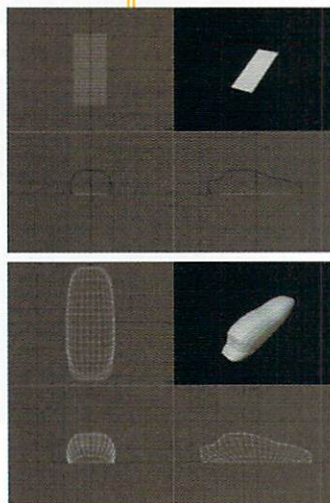
LIGHTWAVE 3D TOOLS

MacroForm 2.0
Puppet Master

FLYER AND TOASTER TOOLS

Fast Frames
FlyFX

In the foreground layer is a mesh object, and in the background layer are two control layers. Using the RailToolz allows the mesh to be quickly turned into:



a quick car body ready for further modeler manipulation.

Puppet Master

Fori Owurowa's Puppet Master plug-in exponentially improves LightWave 3D's character animation capabilities with simple control over complex organic meshes. Imagine the ease of animating a smooth, unified, high-detailed object with specific point controls. That's Puppet Master in a nutshell. Puppet Master is a displacement plug-in that performs "joint socketing," which is a high-end graphics buzzword for connecting parts of separate sections into a unified, seamless whole, automatically. Now you too can use the buzzword just like the Alias users. Don't you feel special?

You begin with an "Anchor" object, which is your whole mesh, and the object that actually appears in the animation, displaced by the Puppet Master sections. The Puppet Master sections are point groups made from the Anchor; as many as you need. For example, you might have a humanoid to animate. An obvious choice is to break the character into sections for body parts such as torso, upper arms, lower arms, upper legs, lower legs, and head, leaving joint areas for Puppet Master to skin in between. In Modeler, you'll make the sections, generally by cutting up a copy of the Anchor object.

Once you have your sections, you parent them in Layout, apply Puppet Master to the sections and Anchor, run Puppet Master Batch, and you're ready to animate. No matter how the sections are moved, sized, or rotated, Puppet Master joins the parts. With some skill and practice, natural joint folds and realistic movement await.

The Anchor can be used with Metamorph, serving as the Shaper object, allowing you to control a very detailed object from a very simple Anchor. Add some IK to the sections and you'll really be doing some smooth character animation without the headaches of Bones.

Even better, you can set conditional morph targets on sections. Like regular morph targets, conditional morph targets are based on the original object, but with Puppet Master the amount of morph is based on the rotation of a control object. With three axes of rotation, your sections can morph into a combination of three targets. It makes morphs, including specific contoured muscle bulges or wing flaps, a snap.

The multiple steps to achieving the proper-

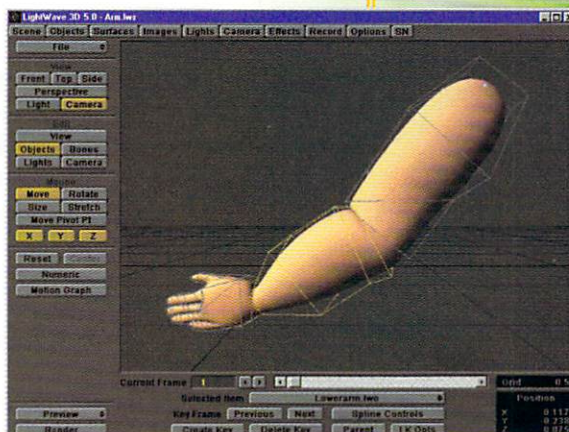
ly "Puppeted" objects are, thankfully, very simple, and easily mastered with a little time and care in the construction phase. This is a good thing, since the accompanying documents shipping with Puppet Master are a bit skimpy for my tastes. In spite of that minor annoyance, I found that the time it took from knowing absolutely nothing about Puppet Master to being completely comfortable with its workings was very short.

Puppet Master works well with most of the other displacement plug-ins and textures, and especially with Owurowa's other LightWave creations: Metamorph and Morph Gizmo. And good old Bones can still work with your Puppeted object, doing things that Bones does best, such as stomach wobbles and other special effects. With Puppet Master, you're free to choose what is the best solution for your animating needs, not just what's the only one.

As an alternative to Bones, Puppet Master, in my opinion, is worth \$1,000 easily. But in the great tradition of the Amiga and LightWave community, Owurowa is practically giving it away at \$349 for Intel, \$399 for Alpha, and \$199 for Amiga. I can't describe the value Puppet Master is at the price; you'll have to use it yourself to truly understand the power in this plug-in. If you intend to do any amount of character animation, you're crazy to do it without Puppet Master.

BY
BRIAN TATOSKY

This LightWave 3D plug-in makes a great alternative to Bones by making character animation easier.



CONTACT INFORMATION

Puppet Master
Fori Owurowa and
Virtual Reality Pictures

\$349 (Intel)
\$399 (Alpha)
\$199 (Amiga)

email: enigma@dorsai.org

mail:
Virtual Reality Pictures
Puppet Master Plug-in
20 W. 22nd St., 11th Floor
New York, NY 10010

Circle Number 102

Puppet Master improves LightWave 3D's character animation abilities with simple control over complex organic meshes.

BY ED JAKOBER

You won't know you need these plug-in Video Toaster Flyer tools and utilities until you try them.



The Fast Frames tool allows the loading of Character Generator pages and Framestores into a single Flyer video clip, thus eliminating load times.

CONTACT INFORMATION

Fast Frames

OZware

\$69

email:

OZware@aol.com

Web:

www.vionline.com/ozware

phone:

(360) 805-0148

Circle Number 103

Fast Frames

When it comes to creating must-have third-party software for the Video Toaster Flyer, OZware's Michael "Aussie" Holten, creator of the Flyer Co-Pilot programs, is in top form with his latest creation, Fast Frames. Fast Frames is an assembly of very useful tools and utilities that you won't know you need until you try them. They are accessed, in the Flyer, by selecting OZ-FastFrames in the "tools" pull-down menu.

One tool built into Fast Frames is the "Key Player." This routine can play a sequence of "keys," CG pages, Framestores, and effects that can be mixed with incoming video while digitizing. This eliminates load times and allows for things like cross fades and flying "keys" over video footage.

"Title Tools" are five AREXX CG routines that are started from within ToasterCG. They are:

1. **OZ-BlackKey**, which converts the current CG page into a true "black key" ready for superimposing from the Switcher.
2. **OZ-CopyBackground**, which copies the current CG page background to any range of pages.
3. **OZ-KillPages**, which clears the text from a range of CG pages.
4. **OZ-PageBuild**, which turns your current CG page into a series of pages where each line is added one at a time.
5. **OZ-TypeItOut**, which takes the current CG screen and renders it out as separate Framestores that build letter by letter, as if in a typewriter.

The above, in conjunction with the final tool called "Fast Frames," is what makes this package fly. "Fast Frames" is simply a utility that allows the loading of Character Generator pages and Framestores into a single Flyer video clip. This eliminates all load times. This might seem a bit simplistic, but it allows for techniques that up until now I would never

have considered, like an instant slide show effect.

The Framestores to be acted on are placed into the project window in the order they will appear. Go to "Fast Frames," set the duration to five seconds, click on Use Fades, then on Perform Fast Frames. After a few query responses, you'll have a finished slide show in a minute or two complete with dissolves! You also can set the record quality from the Fast Frames interface, as well as padding time at the beginning and end of the clip.

I find Fast Frames simple to use and perfect for a lot of production techniques including designing fast collages of Framestores and CG page builds. An interesting use I discovered was to create "animatics." This is a crude form of animation that is best described as the technique used in the old "Monty Python" show. The way I used it was to grab a series of frames off the front page of a newspaper. After each grab, I crumpled the paper up a bit more. I named my first frame "100paper," the next "099paper," and so on until the paper was nothing but a big wad, which was about "030." I moved all the Framestores to the project window all at the same time using the shift and select method. By naming the Framestores with numbers, they all remained in order. I made a quick trip to Fast Frames, set them all to three frames each, and in a few minutes I had a six-second animation of a newspaper un-crumpling itself!

As easy as Fast Frames is, it also has online help to make it one of the easiest-to-learn add-on programs for the Flyer. Holten once again delivers a utility for the Flyer that once you try, you can't live without.

BY BOB KETCHUM

FlyFX



Dimension Technologies' FlyFX (\$129) is an add-on to the already formidable arsenal of NewTek Video Flyer transition effects, except that FlyFX effects are like nothing you've ever seen on the Flyer. As of press time, there were three volumes of FlyFX with some 20 different transitions included in each volume. I found the installation to be completely painless as well as foolproof and it even integrated directly into the Flyer interface.

Use a choice of special transitions like warps, morphs, and particle effects with the help of LightWave 3D, FlyFX, and the Video Toaster Flyer.

What this program does is give you a choice of special transitions like warps, morphs, and particle effects that are rendered in LightWave 3D and inserted between two selected Flyer clips. It sounds difficult, but FlyFX makes child's play out of the usually tedious chore of creating LightWave scenes, loading objects, applying image maps, rendering a clip, then syncing the "transition" between two clips in the project window. It is completely automatic and literally does all the work for you.

Here's how it works:

First, drag two video clips into your project. Then go to the FlyFX:Effects/ drawer, select a FlyFX, and drag it to the project. Now set the In/Out points of your video clips. You must adjust the In/Out points of each clip even if they are already set where you want. Select the FlyFX effect and go to the control panel to set the speed. If you don't do this, the default is 30 frames. You can use the Variable and actually type in the number of frames you want the effect to be. Now try to play your project to ensure everything is set correctly. The effect will act just like a dissolve. If your project doesn't play at this point then your effect won't render correctly.

The next step is to select FlyFX from the Tools pop-up menu. FlyFX loads up and automatically sets up your project. At this point you can check out the bank of effects and see a low-res preview of any particular animation by clicking on the icon. If you want, you can even replace your chosen effect for a different one.

FlyFX is loaded with eye-catching transitions like QuadPeel, Rotate & Flip, SlabTurn, Split & Roll, TubeRoll, Vortex, and other previously unobtainable warp-type effects.

When everything is set right, the final step is to press Render Current Effect. The program will load up LightWave, load the scene, and set all your options. You can actually watch as it sets itself up. What a great bonus! You get a free LightWave tutorial with every set up.

When it is done rendering it will automatically replace the effect crouton in the project window with the newly created clip. That's all there is to it. Now you can save your three-clip project, and using the project-to-project view, drop your three clips into your master project. Or, if you have RenderFX, just render the three clips into a composite Flyer clip and drop it into your master project. Flyer 4.2 users can use the new Join Clips command in the ProWave drawer to bring them together.

Just 15 minutes after installing FlyFX, I rendered three transitions to be placed in a fast-moving television commercial that did not allow enough transition time to use any effects other than *Smooth Fade*. Those three, 30-frame animations took less than 90 minutes total and my client was thrilled with the results.

Whether you are doing commercials, weddings, or corporate training videos, FlyFX will prove itself to be an indispensable production tool for the Flyer.

CONTACT INFORMATION

FlyFX

Dimension Technologies

\$129

Web: ncinter.net/~dhebel/

phone: (814) 838-21284

Circle Number 104

Premieres

NEW PRODUCTS TAKE A BOW ON OUR STAGE

LIGHTWAVE 3D PRODUCTS



PowerMac Sparks and FiberFactory

Binary Arts, Inc., formerly known as Metrograf, has ported its Sparks and FiberFactory plug-ins to the PowerMac. Sparks puts tens of thousands of particles under the control of physics. With Sparks, you work completely within Layout. Particle motion can be affected by gravity, wind, gusting, turbulence, and swirling. Velocity can be key framed and randomized. Birthrate and lifespan can be controlled and randomized. The PowerMac version is \$249.95. FiberFactory sculpts geometrical fibers over the surface of your object. You can create any number of sides and segments to each fiber. Gravity amount, length, and width are under your complete control. Special effects such as random jitter, contour, curl, and kink provide realism. FiberFactory includes the anchor.p layout displacement plugin to anchor the base of each fiber. Use bones in combination with the included anchor.p to style and animate the hair. The PowerMac version is \$149.95.

You can contact Binary Arts, Inc. at (719) 748-3972 or P.O. Box 568, Florissant, CO 80816-0568.

Circle Number 109



LENY CD-ROM RELEASED

MSD has released The LENY (LightWave Expo New York)

CD-ROM, a two-hour interactive video tutorial for LightWave 3D 5.0 and above starring Lee and Ken Stranahan, P.J. Foley, and Andy Frerking. In this CD-ROM, Lee and Ken reveal the powerful techniques used to make LightWave models pop off the screen every week in TV shows like "Sliders," "Star Trek: Deep Space Nine," and "Hercules." Also included on the CD-ROM are tutorials on Particle Storm and FiberFactory. The LENY CD-ROM is a two-CD set available now for Intel, DEC Alpha, and Power Macintosh for \$79. For more information, access the MSD Web site at www.msd-nyc.com. You can also call (888) 673-6921.

Circle Number 110



LightWave 3D 5.5

NewTek has released LightWave 3D 5.5, which began shipping in early July. The upgrade price is \$495, except for the SGI platform,

which is \$995. The upgrade includes all the features found in earlier versions plus:

- Enhanced user interface.
- Non-modal panels.
- New OpenGL with real-time texture viewing and user-selectable background color.
- Multi-threaded rendering.
- Morph Gizmo for character animation.
- Direct3D support.
- A new volumetric lighting engine.
- Hyper-Animation Language for controlling virtually every LightWave 3D feature.
- New audio scrubbing feature.
- Two new modeling tools—Dragnet and Smooth Scale.
- A motion capture data conversion plug-in.
- New color wheel option for great color control.
- Enhanced plug-in architecture.

LightWave 3D 5.5 is available through more than 250 dealers and resellers or direct from NewTek. The full version price (for those not upgrading) is \$1,995, except for Sun and SGI, which is \$2,995. NewTek no longer supports LightWave 3D development on the Amiga platform (see "Ask NewTek"). For more information on LightWave 3D 5.5, see this month's "Waves" column by John Gross.

Circle Number 111



Modeler Commander

Modeler Commander, by Forest Moon Productions, is a scripting plug-in for LightWave Modeler. In short, it brings a user-level macro programming capability to LightWave 3D Modeler users on the Windows platforms. Modeler Commander allows macros (plug-ins) to be developed in Visual Basic and take advantage of all the power that programming environment has; a complete language; a full user interface package; and a professional debugging environment. Alternatively, Modeler Commander provides the scripting engines for Microsoft's VBScript and JScript (JavaScript) languages, which are becoming popular scripting languages for Web pages. Regardless of the language used, Modeler Commander provides access to LightWave Modeler functionality in an object-oriented manner. Modeler Commander can be downloaded from the Web at www.ForestMoon.com. It includes a free 30-day usage period and can be registered for \$50.

Circle Number 112

NEW LIGHTWAVE PRODUCTS

PowerMac Sparks and FiberFactory

LENY CD-ROM

LightWave 3D 5.5

Modeler Commander

NEW TOASTER/FLYER PRODUCTS

Calibar

AV8R Pro +

Aussie's Multicam Editor



Calibar

NewTek is shipping the award-winning Calibar, a pen-size, battery-operated, NTSC test-signal generator designed for both studio and field operations.

Priced at \$349, Calibar is an NTSC test pattern and black burst generator aimed at broadcast engineers, large and small television production facilities, video post houses, and video enthusiasts of all kinds. It works for calibrating the Video Toaster Flyer, too.

Calibar can be used to troubleshoot gear in the studio or in the field. In addition, it can be used to calibrate video monitors for proper brightness and color rendition. It connects easily to any type of video equipment and it is simple to operate.

Calibar is available through more than 250 dealers and 25 distributors worldwide, select retail outlets, and direct from NewTek.

Circle Number 113

TOASTER / FLYER PRODUCTS

AV8RPro+

MegageM, the same company that included the YBT Timeline viewer in Flyer 4.2 for free, has announced its latest timeline editor, AV8RPro+, an enhanced AV8RPro that supports VCR control, tape logging, and automated batch digitizing. AV8RPro+ adds an important new capability: direct software VCR control for automating the transfer of original videotape footage into the Flyer.



AV8RPro+ transforms the VCR-like control panel and GUI features AV8RPro uses for timeline editing support into an actual set of VCR controls for tape control, logging, and auto-digitizing. AV8RPro+ VCR control and auto-digitizing works with many popular tape systems via RS422/9-pin or LANC/Control-L connections. The software costs \$399.95.

For more information (screen shot, Q&A, list of supported VCRs, and more) see MegageM's Web site (www.megagem.com) or contact: MegageM Digital Media, 1903 Adria Ave., Santa Maria, CA 93454, (805) 349-1104.

Circle Number 114

Aussie's Multicam Editor

Ozware has released a product for editors who shoot with more than one camera. Called Aussie's Multicam Editor, the program, which costs \$159, keeps multiple video clips in sync while editing. It was built to help in many types of productions, such as a two-camera wedding shoot,



a three-camera media presentation, or a five-camera theater production. For music videos, you could even shoot a band lip-synching from 50 camera angles, and then synchronize them all to a single music clip. To use Aussie's Multicam Editor, you simply digitize your cameras, sync them up once, and you're ready to switch. The program resets all of the camera clips to show the same time value at the identical frame. You can even set one camera's out point by viewing a second camera. The audio can either be bounced from one camera to the other cameras (courtesy of ProWave's ProMix library), or can track along as a separate audio clip.

Aussie's Multicam Editor is available from most dealers and resellers. It can also be ordered direct from Ozware at (360) 805-0148, 21230 Meadow Lake Rd., Snohomish, WA 98290.

Circle Number 115



LightWave 3D

Video Toaster/Flyer

NewTek Authorized Training

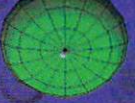
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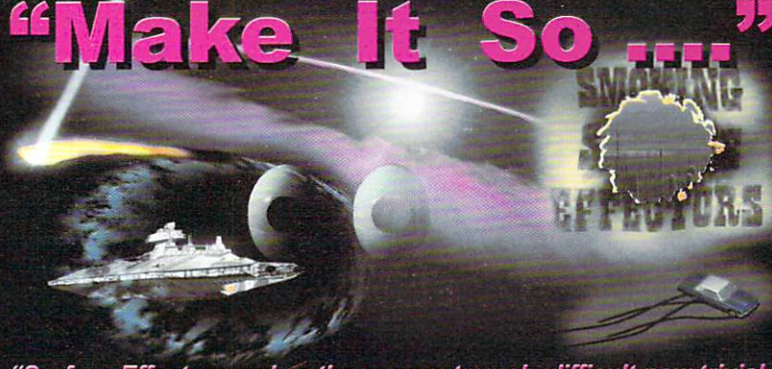
NewTek, Inc.
Digital Semiconductor
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Quantum Corporation
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Computer Art & Visualization Education

JACKSONVILLE UNIVERSITY

Circle #221

"Make It So"



"Surface Effectors makes the once extremely difficult now trivial."

Mike Stetson, Animator, Foundation Imaging

On a mission to create stunning Lightwave animations? Yet you lack the speed, the power, the ability to really make it fly? Well, Surface Effectors/DSFX (a plugin for Lightwave) can bring to bear a powerful arsenal of tools to help accomplish your mission at warp speed, no matter what the task:

- **Photorealism:** use SE/DSFX for better control of reflectivity and transparency for more realistic water, glass, plastic, floor tile, and other non-metallic surfaces. Add cross-surface "dirt" and dust. Simulate light bleed from one object to another.
- **Legal and Presentation Animation:** use SE/DSFX to create properly registered tire skid marks, highlight regions of interest, poke holes in things, do transparent cutaways.
- **Character Animation:** use SE/DSFX to create accurately IK-targeted irises and pupils and to produce emotive coloration effects (blushing, turning pale with fear, green with envy, blue from losing your breath). Create properly registered footprints.
- **Logo Animation:** use SE/DSFX to add pizzazz to your next "flying logo". Have full control over DVE-style glints and gleams. Set up signature/writing animations in hours, not days, with Dyna-Trails (a powerful feature that leaves trails of effect on any surface parameter on any surface).
- **Effects Animation:** use SE/DSFX to create fire, smoke, plasma rings, laser burns, deflector shield effects, "rezzing" effects, "colorization" effects, dynamic glows (with built-in support for Pontari's SuperGlow plugin).
- **Everyday Animation:** use SE/DSFX to envelope your surface parameters, and save hours and megabytes used for image sequences.

Whatever your mission, SE/DSFX can shave hours, perhaps days, from your journey.

SURFACE EFFECTORS/DSFX 1.1

<http://www.noblestar.net/~prems/surfeff.html> (904) 575-6051 (10am to 6 pm EST)

Circle #222



WAVE F/X

LIGHTWAVE SUCCESS IN THE COMPETITIVE TV & FILM F/X MARKET

Salvaging a fantasy dance sequence from *Sprung* results in satisfying LightWave 3D art.

Sprung Scene Comes Alive

BY TOM WILLIAMSON

LIGHTWAVE'S FANTASY DANCE



The final "Fantasy Dance" composite sequence, as seen in the movie (top) and the shot as it appeared before any special effects were added (above).

Welcome to "WaveFX," a regular feature on LightWave 3D's continuing role in feature film and television effects. In the past few years, LightWave has been a fundamental tool in an increasing number of special effects. With the efforts of a few fairly small companies, the industry has had to sit up and notice what these companies and LightWave are capable of accomplishing. With the success of such shows as "Babylon 5" and "Sliders," LightWave has emerged as one of the premier 3D packages in the effects community.

My intention with "WaveFX" is to get into the nuts and bolts of digital FX. Not only will I be doing articles on specific shots, I'll be covering the people and shops that create the magical images for the big screen. I'll also answer questions about special effects and hopefully educate and entertain you in the process.

First of all, allow me to introduce myself. I'm Tom Williamson, vice president and effects supervisor for Computer Café, Inc. You might remember me from a few articles in *LightWavePRO*. My passion for visual effects goes way back to 1977, when a little film named *Star Wars* came out and warped me for life. I began feeding

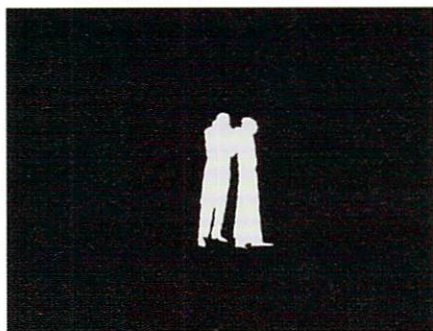
myself everything I could learn about FX and at age 12 I got my first movie camera. I continued to make my own films and effects all the way through high school.

In 1988, I broke into the business with the remake of *The Blob*. Back then I did animatronics, basically robotics for rubber monsters. I also tried my hands at motion control, miniatures, models, props, and all kinds of other FX stuff over the course of six years and 25 films. In 1993, I decided to go digital and proceeded to teach myself 3D at home with my Amiga and (gasp!) Imagine.

After a few months of hard work, I decided I might have what it takes to break into the digital realm. Quite by coincidence my mother-in-law sent me an article in the local paper about a CG shop that was opening up on the central

coast of California, where I grew up. So I grabbed the phone and called up Jeff Barnes and David Ebner, founders of Computer Café. Both Dave and Jeff were interested in doing feature films, so I joined the team. With a short list of contacts and a big leap of faith, my wife and I moved north. I quickly picked up LightWave and less than a year later we were negotiating our first feature film, *Lord of Illusions*. Since then we've been pretty busy and we're currently working on our fifth feature. Well, enough of that, let's get to the effects. . . .

This issue's featured effect is the fantasy dance transition for Trimark Pictures' *Sprung*, which hit theaters in late spring and is soon due to video. This was an interesting shot not only from a technical standpoint but also from a creative one. What started out as



The matte for compositing (left) and the Particle Storm-generated "pixie dust" (right) used in creating the "Fantasy Dance" sequence.

somewhat of a salvage job turned into an artistically satisfying shot. Here is how we did it.

The Concept

The story of VFX-S17 (the shot's real name) began during a production meeting for *Sprung*. I was asked by director Rusty Cundeiff and producer Robert Hoffman to look at a sequence that was giving them some trouble. The scene in question involved two of the main characters arriving late to a party (very late, in fact; everyone is gone). They decide that they can make their own music and the scene transitions into a fantasy dance with both actors dressed in formal attire. Actually, that was the problem—the scene didn't really transition, and editing alone seemed to be missing something. The cut from the wide shot was a pretty tight two-shot, and you didn't even notice that their clothes had changed.

After watching the scene and the raw footage, I formulated a plan: We could create a transition by compositing the characters from another shot, do a wipe reveal, and jazz it up with a spiral of pixie dust. No problem! With a fairly clear picture in my head we went to work. The raw footage was carefully screened and selects were made of the characters in a suitable position. The plan was to take the original shot, generate a clean plate, rotoscope the characters from the other shot, composite them, add the wipe reveal, and render the particle pixie dust on top. Not a simple task, but we love a challenge. After the footage was scanned and delivered to us on Exabyte, we had what we needed.

The Clean Plate

In order to composite the two dancers on top of themselves, we needed to get rid of them from the original shot. This was quite a task primarily because the shot wasn't locked off. Fortunately, we had a few things in our favor. For one, the camera stopped and stayed pretty stable about halfway through the 900-frame shot. Second, the actors milled about during the tail end of the shot, revealing the background behind them. And finally, Computer Café is lucky enough to have Kama Moiha, one of the finest removal experts in the visual effects industry. Using Avid Matador Paint, Kama painstakingly wiped the plate clean of the actors. This was accomplished by using areas behind the actors rubbed through and a composite of the rising steam on the water from earlier in the shot. Another problem was the actors' shadows—they kept moving. In our final comp the actors would be stationary, so we had to use a freeze frame of the dance floor. To keep the grain moving (a dead giveaway of a freeze-frame) we imported the still into LightWave and used our film-grain plug-in to create a sequence of frames with moving grain. Then Moiha painted a matte of the surrounding area and composited the rest of the frame on top of the new sequence. Now we had a shot where two actors walk into frame, wander around for a little while and "poof," disappear!

Rotoscope

Now we needed some mattes for compositing. Moiha used Matador's roto-splines to extract mattes of the actors from both the original shot

TERMS OF THE TRADE

- PLATE:** A shot to be used as a background for a visual effect.
- CLEAN PLATE:** A plate with no actors or action. This is used primarily for removal work.
- ROTSOCPE:** The process of hand animating an element. Most commonly used to create mattes but it's also the technique used for electrical effects, lasers, etc. The name comes from the instrument that was used to create these effects with classic film techniques.
- MATTE:** The black-and-white image used to composite an element onto a background. Also referred to as an alpha channel.
- COMPOSITE:** The process of putting an element onto a background. For instance, layering a ship on top of a space scene.
- EXABYTE:** A backup medium that uses 8mm videotape.

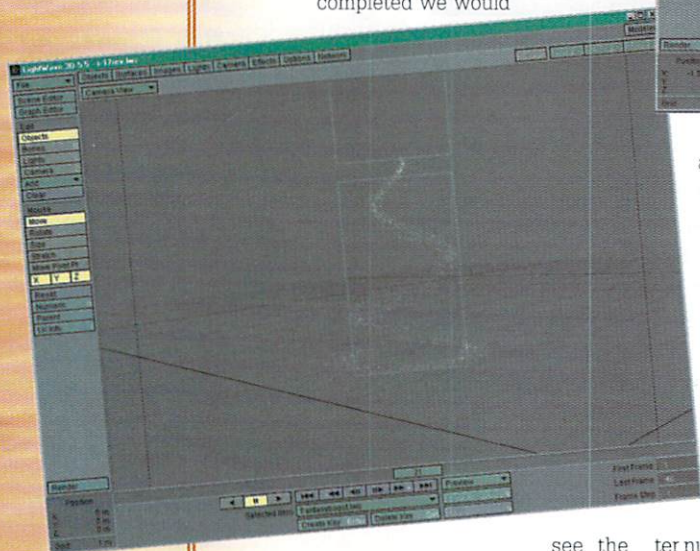
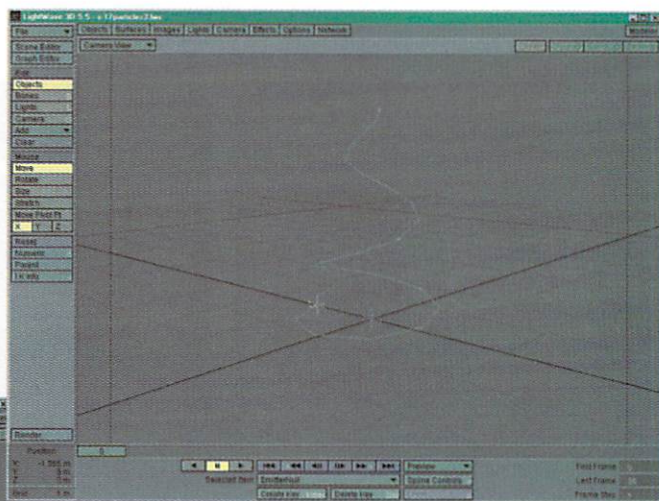


Right:
The Null scene ready
for Particle Storm.

Below:
The final composite
scene in LightWave.

starting at the frame they disappear, and from the second shot.

After creating the matte sequences, Moiha went to work compositing the actors from the second shot into the new clean plate. After making some subtle tweaks to the size, color, and contrast, the composite was complete, and quite convincing. Now, if we combined the work already completed we would



see the shot where the two actors come in, meander around, and "poof," they're wearing formal attire. Not bad already, but now it needs an extra splash of magic—enter LightWave again.

Pixie Dust

To add that extra something we decided to use Dynamic Realities' Particle Storm to create a swirl of pixie dust. This also served double duty as a mask for the linear wipe we planned to transition the composite. To create the spiral, I went into LightWave and added three null objects. These were named "Spin," "Rise," and "Emitter"

The spin null controlled the number of rotations, the rise null was parented to the spin and controlled the rate of ascent, and the emitter null was parented to the rise and was used to actually cre-

ate the shape of the spiral. It would have been possible to create the spiral with a single null, but it would have been time-consuming and this allowed the director to add more spins without much hassle. Once the animation was set up, it was time to fire up Particle Storm. A fountain emitter was parented to the emitter

ter null and set up to emit particles with very little velocity and reduced gravity. The particle number and birth rate were adjusted until a good amount of particles continued to be released just until the emitter null reached the end of its animation. The particle shader was set up so the particles would start white, turn yellow and fade out rather quickly and a cube collision object was loaded and set up to be aligned with the ground plane. Now I had a spiral of particles that spun around, bounced on the ground, and faded out. After everything was set up, a .psm file was recorded and a particle object was saved.

The Final Comp

Now it was showtime. A new scene was created by loading the clean plate in the background and loading the particle object

with its corresponding .psm file. The spiral was positioned where the actors were in the frame. A small plane was added and positioned in the center of the spiral. This plane was surfaced with front projection mapping of the composited sequence with a transparency map of the sequence's mattes. A taller plane was added and positioned just in front of the first plane. This was surfaced with front projection mapping of the original shot with a transparency map of that shot's matte sequence. A transparency gradient also was added at the bottom of the plane.

Now it was just a matter of animating the front plane to move up with the particles to create a wipe effect revealing the composite underneath. The rotoscope sequences allowed the particle spiral to seem to go behind the actors. The final touches were some glow on the particles and motion blur. It all added up to 44 frames of pure LightWave movie magic!

Tom Williamson is effects supervisor for Computer Café, Inc. You can reach him at tomcatjr@concentric.net or cafe@computercafe.com. Williamson will be teaching a course on film effects at NewTek Expo 1997.

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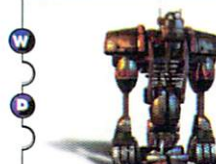
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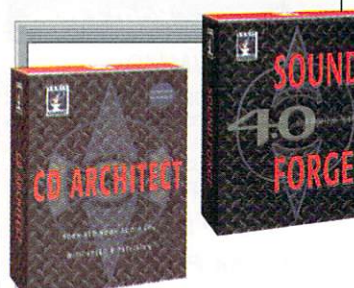
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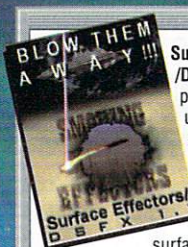
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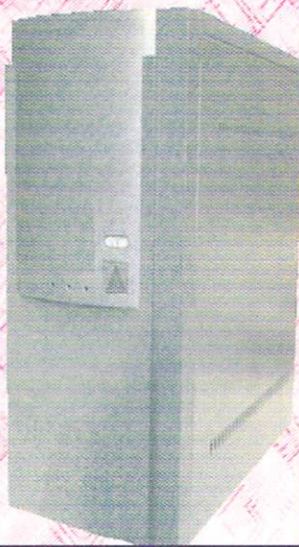
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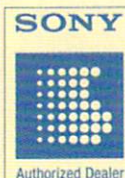
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Panasonic

AG-EZ1

3-CCD Digital Videocassette Camcorder



- Three CCDs with 270,000 pixels each are horizontally staggered for optimum resolution.
- Digital recording system delivers incredible 500 lines of horizontal resolution and virtually no noise. The signal-to-noise ratio is 54dB, an improvement of 6-9 dB over conventional analog systems. This actually represents a S/N ratio 2-3 times better than existing camcorders.
- Audio is also recorded digitally using PCM (Pulse Code Modulation) for quality that rivals CDs. You can choose between two-channel 16-bit recording or two sets of 12-bit stereo, with the second set reserved for uses such as narration.
- Includes a huge 1.5" 180,000 pixel color viewfinder. The viewfinder also tilts 120 degrees vertically for shooting subjects from high or low angles, and its professional size means you don't have to press it against your eye to see the picture.
- Built-in Digital Electronic Image Stabilizer (DEIS) compensates for jitter video and is particularly effective when the digital zoom is employed.
- Equipped with 10:1 power and 20:1 digital zoom lenses. Both zooms are adjustable in four speeds (3.5 seconds—15 seconds) based on how hard or soft the zoom toggle is pressed. To set up a shot quickly, a Turbo Zoom function moves from tight to wide angle, or vice versa, in under two seconds. For extreme close-ups the lens can focus up to 1/4 inch from the subject.

- Digital Photo-Shot lets you record a still-frame for about six seconds, while audio continues as normal. This feature is great for creating video photo albums or insurance tapes, as 290 still pictures can be recorded on a single 30-minute tape and 580 shots on a 60-minute tape. Using the TopScan feature any shot can be found easily.

JVC

GR-DV1/GR-DVM1

CyberCam Digital Video Camcorders

DIGITAL VIDEO
The GR-DV1 and GR-DVM1 combine a 570,000 pixel CCD with 4:1 digital component recording to deliver razor sharp pictures with 500 lines of resolution. Digital image stabilizer eliminates camera shake without affecting resolution.

DIGITAL AUDIO
CD quality audio is now available. Digital audio recording delivers 2 channels at 48kHz (16-bit) sampling for highest quality or four channels at 32kHz (12-bit) when dubbing or mixing is required.

DIGITAL EFFECTS
A multitude of special effects are possible with the GR-DV1 including wipes, fades, and dissolves. In addition, some specialized effects such as Classic Film, Monotone, Sepia and Strobe, can be recorded in the camcorder or can be played through docking station—even if they weren't originally recorded.

SNAPSHOT/QUICKPIX/ANIMATION
• Snapshot mode captures still images with a white border around it and even adds a shutter sound effect. In Motor Drive mode multiple snapshots get recorded in rapid succession with an interval of 0.7 seconds between pictures. A Snapshot Search feature lets you put together a video album using captured photos.

• QuickPix or 5-second-record mode automatically records five second clips of video and audio when start button is pressed.
• Animation mode records scenes for just 1/8th of a second each time the start button is pressed. When inanimate objects are recorded with slight changes in position between shots, an animation effect is rendered to the objects making them come alive.

GR-DVM1

Same features as the GR-DV1 except it adds the world's first high-resolution 2.5-inch polycrystalline silicon TFT active matrix monitor. The high-definition 180,000-pixel LCD offers incredible viewing with a horizontal resolution of 400 lines.

DIGITAL ZOOM
10X variable speed optical zoom with built-in macro delivers razor sharp images from a distance—or as close as 1.5 cm. A 20X digital zoom and 100X Super Digital zoom allow image capture from tremendous distances while retaining a good degree of sharpness.

USER FRIENDLY MENU SYSTEM
Zoom rocker control is used to make the different selections as they appear in the color viewfinder so you can pick settings from the menu without taking your eye away from the viewfinder. This design also keeps controls and switches to a minimum.

DOCKING STATION
Multi-function docking station offers even more sophisticated playback capabilities, plus advanced editing functions:
• R.A. (Random Assemble) editing enables programmed rearrangement of up to 8 scenes at a time—just by marking the beginning and end of scenes.

• Insert editing and 4-channel stereo audio dubbing are possible using the docking station. Video insert allows new video to be inserted over pre-recorded segments without disturbing the audio segment. When inserting audio, 16 bit (48kHz) full audio insert replaces recorded audio without disturbing the existing video track. In the 12 bit (32kHz) mode, 2 additional audio tracks can be added to the existing audio and mixed.

• In addition to the five special effects available through the docking station, there are 17 scene transitions that can be selected.



Panasonic

AG-DP800H SUPERCAM

S-VHS 3-CCD Digital Signal Processing Camcorder



- Three high-density 380,000 pixel CCDs with half-pitch pixel offset achieves over 750 lines of horizontal resolution, a S/N ratio of 60dB and remarkable sensitivity of F8 at 2000 lux. Additionally the Frame Interline Transfer (FIT) CCDs minimize vertical smear, so you maintain impressive picture quality even in very bright illumination.
- Digital Signal Processing circuitry provides four valuable benefits:
1) Consistently reliable up-to-spec performance.
2) Fine adjustment of a wide range of parameters.
3) Memory storage and instant recall of specific settings.
4) More flexible and higher quality image processing, as well as easier maintenance.
- Six Scene File modes. There are two user modes for custom digital parameter settings including Horizontal Detail, Vertical Detail, Chroma and Dark Detail, and Color Correction. The four preset modes are normal, fluorescent, special and sparkling.
- In addition to regular AGC (Automatic Gain Control), Supercam has a Super High Gain Mode. At F1.4 this enables shooting under illumination as low as 2 lux while retaining detail and color balance.
- Synchro Scan function allows flicker-free shooting of computer monitors. Electronic shutter increments can be set variably from 1/61 seconds to 1/253 of a second.
- Built-in internal time code generator lets you record with SMPTE LTC/VITC (Longitudinal/Vertical Interval) time code.
- Two hi-fi stereo audio channels with a dynamic range of 80 dB, as well as two linear audio channels with Dolby NR. Normal/Hi-Fi recording is selectable. Uses XLR connectors to further ensure high-quality sound.
- Has a 26-pin connector on the back that outputs a composite or component video signal. This enables convenient backup recordings using an additional VCR equipped with a 26 or 14-pin connector.
- Phantom power can be supplied to an optional microphone. Power can be switched off to prevent battery drain when not in use.

JVC

PROFESSIONAL

GY-X3 3-CCD S-VHS Camcorder



- By employing professional camera technology in new economical ways, JVC has succeeded in bringing to market a professional 3-CCD camera that breaks all previous price barriers. The new GY-X3 delivers all the performance of a high end 3-CCD camera—high resolution, high sensitivity, low noise and natural color—at an incredible price.
- Features:**
- Three 1/3" CCDs provide a sensitivity of 2000 lux at F8.0, signal-to-noise ratio of 60dB and 650 lines of horizontal resolution.
 - Low light capability allows you to shoot in as little as 4 lux and still have bright pictures with good resolution and strong, vivid colors.
 - Full Auto Shooting (FAS) mode instantly adjusts to changes in shooting conditions. You can go from bright outdoors to indoor lighting and gain, iris, audio level and color balance will be automatically adjusted.
 - Variable Scan View allows flicker-free shooting of a computer monitor.

- Has a built-in 14:1 (5.5-77mm) continuously variable speed zoom lens. The amount of pressure applied to the rocker determines the speed of the zoom. Both the iris and zoom can be controlled manually if desired.
- Built-in Control (CTL) time code generator as well as a time/date generator. The advanced CTL time code generator has a "scene finder" function that records an identification code each time you start taping. This lets you easily advance to the next or previous scene when using the JVC Edit Deck system.
- Large high resolution 1.5-inch viewfinder displays comprehensive status indicators.

GY-X2B 3-CCD S-VHS Camcorder



- Newly designed three 1/2" CCD image sensors deliver 750 lines of horizontal resolution & superb signal-to-noise ratio of 62dB
- New micro-lens technology provides exceptional sensitivity of F8.0 at 2000 lux and LULLUX mode lets you shoot with almost no light! Shoot superb footage with excellent color balance at a mere 1.5 lux
- Variable Scan allows flicker-free shooting of a computer screen
- Quick Record Mode - when turned on the camera is set to the auto iris even if lens is set at manual. Also activated is (ALC) Automatic Level Control and EEI Extended Electronic Iris which provides both variable gain and variable shutter. Now you can shoot continuously from dark room to bright outdoors without having to adjust gain, iris or ND filter.
- Full Time Auto White circuit lets you move from incandescent to outdoor lighting without changing white balance or the filter wheel. • Dual output system allows camera output to be connected directly to an external recorder

NEW! KY-D29 3-CCD Color Video Camera

One of the most sensitive cameras ever developed, the KY-D29 sets the standard for 3-CCD cameras and is also ideally suited for today's digital recording formats. With a sensitivity F11 at 2,000 lux, the KY-D29 can shoot in light as low as a remarkable 0.35 lux. It also offers a signal-to-noise ratio of 65 dB (with its DNR function on), and delivers 850 lines of horizontal resolution. The exceptional resolution and sensitivity of the KY-D29 are achieved by three new 760,000 pixel 2/3" interline transfer (IT) CCDs, the highest pixel count in the industry.

- All-New Digital Signal Processing**
- Advanced 14-bit Digital Signal Processing (DSP) and 3-dimensional Digital Noise Reduction (3D DNR) circuitry make this camera ideal for acquisition with today's popular digital formats, especially JVC's revolutionary new Digital-S.
 - DSP within the camera provides astonishingly crisp, high-quality images, while minimizing analog distortions and noise. DSP also makes the camera more flexible and easy to use. It even smooths the transitions between gain and white balance settings so that viewers won't notice sudden changes of settings while the tape is rolling.
 - Digital signal processing is enhanced with new 3D digital noise reduction circuitry to make it even more practical. By mixing multiple frames to cancel out random noise, then using motion detection to minimize lag, JVC's exclusive 3-D DNR produces dramatic results, far superior to any other DSP camera.

Super LoLux for Extremely Low Light Shooting
Incredible new Super LoLux technology allows you to obtain a broadcast-quality picture in light as low as 0.35 lux. This extraordinary low light capability is the best ever achieved and is made possible by utilizing JVC's exclusive LoLux dual pixel readout technology (increasing gain by 6 dB without introducing noise) while at the same time doubling the pixel readout integration time to 1/30 second.

Versatile Docking Capability
• Extremely high quality 4:2:2 digital recordings can be made by docking the KY-D29 to JVC's Digital-S BR-D40 dockable recorder. This digital combo produces recordings far superior to any component analog camcorder, or 4:1:1 digital camcorder. The KY-D29 also docks directly to JVC's BR-DV10 DV-format and BR-S422 S-VHS dockable recorders and can dock to Betacam SP recorders using an adapter.

- Features for a Wide Range of Applications**
- The KY-D29 is loaded with a wealth of high-performance features, making it ideal for a wide range of broadcast and professional applications. Built-in continuous auto black (CAB) continuously takes a black balance setting, and full-time auto white for continuous compensation of color temperature changes, balance the camera in real time, all the time. This allows you to concentrate on getting the shot, and not on adjusting the camera.
 - Because different shooting situations require flexibility, the KY-D29 offers selectable vertical resolution. In the Standard Mode, the camera produces 380 TV lines of vertical resolution. However, in the "Y-Plus" high vertical resolution mode, the camera puts out 420 TV lines of vertical resolution, allowing you to increase vertical resolution without sacrificing sensitivity or lag, while maintaining 850 TV lines of horizontal resolution.
 - Focusing is easier than ever with Accu-Focus. By momentarily decreasing depth of field, fast & critical focus is achieved instantly.
 - Commonly used features can be activated without having to scroll through layers of menus. Features such as shutter control, variable scan, black stretch, black compress, CAB, iris modes, Accu-Focus, DNR and zebra are all menu-free. And for those times when events move so fast it prevents you from making any settings whatsoever, the KY-D29's Full Auto Shooting (FAS) mode controls all of the camera's requiring you control only the focus, zoom and trigger.
 - Other camera features include a built-in time/date, built-in battery level selection switch, an i-stop display in the viewfinder, and a "battery remaining" display for Anton Bauer battery packs. A special Black Stretch/Black Compression circuit is also included.





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Panasonic



AG-2550 Industrial 4-Head VHS Hi-Fi VCR

- Same exact features as the AG-1310 plus—
- Super jog/shuttle puts 19-step control over playback speed at your fingertips, giving you greater control while searching for scenes.
- Hi-Fi stereo sound system with a dynamic range of more than 90 dB.

AG-1980 S-VHS Hi-Fi Editing VCR

Incorporates advanced digital signal processing and digital noise reduction circuitry to deliver such high picture quality—that its third-generation picture looks almost as good as first-generation offerings from other VCRs in its class. In addition, the AG-1980 also features a full field digital TBC, insert and assemble editing, Hi-Fi stereo, quick response mechanism and a remote editing terminal.

- Still the only VCR in its class to provide near frame accurate editing. When used with edit controllers from Videocons, FAST and FutureVideo, the AG-1980 achieves an accuracy of ± 2 frames And, the 5-pin edit terminal on the rear panel makes it very easy to set up an editing system.
- Performs all assemble and video insert edits as well as audio video dubbing. Also has independent linear audio input and output for more flexible audio dubbing.
- Hi-Fi stereo audio with a frequency response of 20Hz to 20kHz and a dynamic range of 90dB. It also has Hi-Fi recording level control, headphone monitor terminal with volume control and a mic input terminal.
- Advanced dual-loading mechanism features a quick response time, requiring only 0.5 seconds for a picture to appear from Stop mode and 1.9 seconds from FF/REW.

- Digital Processing:**—Digital Comb Filter using advanced 3-dimensional system provides complete Y/C (luminance/chrominance) separation. This practically eliminates color and luminance blurring.
- Field coefficient Digital Noise Reduction (DNR) circuitry processes the Y and C signals separately, thereby boosting the signal-to-noise ratio and reducing noise during playback.
- Has a built-in full field TBC (Time Base Corrector) that eliminates even the smallest of jitter, skew, head impact error and color blurring. Invaluable for editing, the TBC helps maintain high picture quality even through the third-generation.
- Besides its digital circuitry, the AG-1980 also features laminated video heads. Clearly superior to heads of conventional ferrite type provide richer, more vibrant color reproduction and a higher signal-to-noise ratio.

AG-5700 S-VHS Hi-Fi RS-232 Editing VCR

- Built-in RS-232 provides machine control of playback, recording and editing functions from a PC. Use the power of your computer (with optional software) to assemble hundreds of scenes, create edit decision lists and do complex editing jobs.
- Uses amorphous video heads which are clearly superior to conventional ferrite heads—magnetizing strength is much greater, yielding a higher S/N ratio.
- Incredibly accurate, with optional AG-A570 Edit Controller, accuracy of ± 3 frames is achieved.
- Auto Repeat function continuously replays a tape which can be cued for tape's end or when recording material ends.
- Separate Hi-Fi (Ch 1/Ch 2) audio recording level controls with display. Also has a headphone output with volume control.

- Ideal for video presentations. The AG-5700 weighs less than 13 lbs, extremely compact, one of which can be set for two operations in one event to allow control of a CD, DVD or character-generator device that has a GPI input terminal.
- Simple mode setting (cut editing/single event, A/B roll and split audio editing).
- 4-channel audio editing, color frame editing.

AG-A850 Multi Event Editing Controller

Equipped with five RS-422 (5-pin) remote terminals, the AG-A850 can control five VCRs and produce three tapes at one time. It also features a 512-event memory and two sets of Jog and Shuttle dials. When you connect 4 players and 1 recorder, the AG-A850 allows control of 2 players as source machines. (Any of the connected VCRs can serve as the recording source, with selection made at the control panel.) When 2 players and 3 recorders are connected, all 3 recorders can be controlled, allowing simultaneous production of three tapes.

- Massive 512 multi-event memory allows a program with many cuts to be automatically and continuously edited.
- For convenience, the data is held in memory for 3 days.
- Two sets of Jog and Shuttle dials assure excellent control.
- 10-key pads add convenience when entering edit points.
- High-precision editing (0.0 frame with time code).
- Slow-motion editing using VCRs with dynamic tracking.

AG-DS540/AG-DS550 S-VHS Source Player/ S-VHS Edit Recorder

- Digital Signal Processing for improved picture quality, and for maintaining uniform picture quality during editing. Digital processing circuits include:—Chroma Aperture Compensation (CAC): Eliminates color blurring and expands chroma bandwidth.
- Digital Noise Reduction (DNR): Processes Y/C signals separately to boost S/N Ratio by minimizing noise during playback.
- Digital Comb Filter: Advanced 3-dimensional system for total Y/C separation providing reduced color and luminance blurring.
- Employs amorphous video heads that have a higher magnetic coercivity than conventional ferrite heads. Expanded frequency response from the amorphous heads enhances picture quality by minimizing color blurring.
- Built-in LTC/VITC (Longitudinal/Vertical Interval) time code reader/generators for absolute frame accurate editing.
- Two Hi-Fi stereo channels with a dynamic range of 90dB as well as 2 linear channels with Dolby NR. Each audio channel has its own input (AG-DS550 only) and output with individual channel-level setting capability and XLR connectors.
- Performs auto split editing which lets you set the edit-in and edit-out points separately from those for video.

- 3-dimensional digital TBC provides excellent dropout compensation.
- IQ mechanism delivers precise, high-speed operation. The dual-loading system achieves high-speed operation while protecting tapes and heads. The tape transport mechanism uses five direct drive motors, including two reel drive motors.
- Capstan Control System with large capstan spindle allows high-speed search at 32x normal speed (with color picture).
- 3 rack units high, they are compact for easy space saving installation. 19" rack-mountable with optional AG-M730.

BT-S1360Y 13" Color Video Production Monitor

The BT-S1360Y is a full-function, professional 13" production monitor with a wealth of features. They include: superb 420-line horizontal resolution, S-Video input and output, advanced automatic white balance circuitry, blue-only mode, underscan and pulse-cross. All this, housed in a rugged, rack mountable metal-hybrid cabinet. So, for long-term reliability in any professional application, the BT-S1360Y is the ideal choice.

- Incorporates advanced, proprietary white balance circuitry that stabilizes white balance to provide outstanding picture performance automatically.
- S-Video input and advanced video circuit technology provides a remarkably sharp picture with over 420 lines of horizontal res.
- External sync inputs and outputs provide for synchronization with other equipment fed with the same sync signal.
- Blue Only mode plus Chroma selection provide a monochrome image for fine adjustment of contrast, brightness, chrominance & hue.
- Pulse Cross—displays horizontal and vertical intervals at the center of the screen so you can examine data in the blanking area and also sync/burst timing.
- Two sets of video/audio inputs and outputs.

- Underscan—shrinks the scanned area of the picture tube approximately 5% enabling the entire active picture area to be displayed. Lets you detect intruding cameras and mike booms.
- Switchable color temperatures of 6500°K (broadcast standard) or 9300°K (for pleasing picture).
- Built-in speaker and headphone jack.
- Rack-mountable with optional BA-131 brackets.

BT-S 1360Y Olympic Demo Special!

We have a limited stock of BT-S1360Y monitors that were used by Panasonic exclusively at the 1996 Olympics in Atlanta. Used only by Panasonic engineers in broadcasting the summer games, these monitors are like new.

Demo Special \$599 (\$400 less than our regular selling price on this monitor)

SONY

SVO-2000 S-VHS Hi-Fi Editing VCR

The SVO-2000 is a powerful, yet easy-to-use S-VHS Hi-Fi editing recorder. Two SVO-2000s combined with the optional RM-250 Edit Controller form a cost-efficient cuts-only editing system—with assemble, video insert, audio dub and program editing.

Superb Video and Audio Performance

- S-VHS format delivers 400 lines of horizontal resolution and consistent, clear image reproduction for superior editing results.
- Adaptive Picture Control (APC) for optimum picture. In record mode, APC automatically tests an inserted tape and checks the condition of the video heads. It then adjusts the recording circuitry to capture clear and crisp images. In playback, APC automatically sets the ideal balance of picture sharpness and clarity.
- Hi-Fi stereo recording system has a wide frequency response of 20Hz to 20kHz and a superb 90dB dynamic range, and individual recording level controls for the left and right channels.

Editing Features:

- The SVO-2000 has a Control-Edit 5-pin remote terminal that allows it to be controlled externally. Connects directly to the optional RM-250 for easy setup.
- Control-S input and output terminals allow two SVO-2000s to be connected for synchro editing—without the RM-250.
- RM-250 also offers program editing capability, which allows automatic sequential editing of up to 20 pre-assigned scenes.

SVO-2100 S-VHS Editing Recorder

- S-VHS format provides excellent picture quality and consistent, clear image reproduction for superior editing results.
- For-channel audio recording. Two-channel Hi-Fi stereo with a superb 90dB dynamic range and a wide frequency response of 20Hz to 20kHz. Plus two editable longitudinal (normal) audio tracks. By using the AUDIO MONITOR selector, longitudinal audio or Hi-Fi audio can be monitored.
- Auto head cleaner removes tape residue preventing head clogging and deterioration of picture quality.
- Continuous auto repeat playback function.

Playback and Recording Functions

- By connecting multiple SVO-2100s via the VIDEO IN connector or THROUGH connector, they can simultaneously record the same program.
- When the Power On Recording or Power On Playback is set, it automatically starts recording or playing back a program the moment the power is supplied from externally connected equipment. This allows uninterrupted automatic VTR operation.

Accurate Editing and Remote Control

- Optional SVBK-10 (RS-232C Interface Board with LTC time-code reader and generator) allows the SVO-2100 to communicate with external equipment such as computers or Sony's FXE-100/120 editing system.

JVC PROFESSIONAL

SR-S365U S-VHS Recorder With RS-232 Control

With high-resolution S-VHS, jog/shuttle search and built-in RS-232C interface, the SR-S365U is the foundation of an affordable pro editing system. Convenient functions such as insert/assemble editing and Random Assemble Editing let you produce edited programs right away. And since the SR-S365U is designed for use with the professional RM-G800U Edit Controller, putting together a high-performance editing system with all the benefits of precision CTL time code editing has never been easier.

- S-VHS picture quality with 400 lines of horizontal resolution plus noise reduction circuitry keep pictures clear and sharp.
- With just the RM-G800U and a pair of SR-S365U's, you have the most economical and productive time code editing system available. Edit video independently of the audio, adding new audio later if desired. For faster, more flexible editing, build a mixed system, using the powerful BR-S800U VCR. Either way, you'll get the benefits of CTL time code.
- Two channels of Hi-Fi for dynamic, high-quality stereo sound and an editable monaural (normal) channel. A new self-dubbing function allows you to copy the existing Hi-Fi track onto the normal audio track.



- Built-in time code generator/reader utilizing JVC's CTL Time Code System records time code data on the control track for fast and accurate access to any frame. Far superior to conventional control track counters that lose reference when the tape is removed from the machine. CTL Time Code can also be post-processed without sacrificing the audio track.
- Built-in RS232C interface so you can connect it directly to a PC. Compatible with the many RS-232C-based editing controllers available today.

Other Features

- Flying erase head • Hi-Fi audio recording level controls & indicators
- Headphone connector with volume control
- Automatic head cleaner • Digital hour meter indication

VES-58 EDIT-DESK S-VHS Editing System

BR-S500U Edit Player • BR-S800U Edit Recorder • RM-G800U Edit Controller

Fast, accurate and professional editing is affordable. Linked via JVC's proprietary control bus, these three units offer all of the editing features professionals have come to expect. The VCRs feature a fast, heavy-duty tape drive and the built-in CTL (Control Track) time code provides unparalleled accuracy and flexibility. Best of all, the VCRs feature an open architecture for easy system upgradeability.

SUPERB VIDEO PERFORMANCE
Picture improvement technologies like digital Y/C separation, chroma noise reducer, chroma aperture correction and a 3-line cross-talk cancellation all combine to offer outstanding image quality, even when dubbing down multiple generations.

CONTROL TRACK TIME CODE SYSTEM

JVC's CTL (Control Track) Time Code System records absolute tape address information (hrs: min: sec: frames) on the control track, for fast and accurate access to any frame on the tape - far superior to control track counters that lose reference when the tape is removed. CTL Time Code can also be "post striped" during recording.

FOUR-TRACK AUDIO

Two Hi-Fi stereo channels with a wide frequency response and dynamic range of 60 dB and two linear tracks. The BR-S800U's linear tracks can be dubbed independently of each other and of the video - ideal for adding background music or sound effects. There are 2 audio level meters, switchable between the Hi-Fi and linear channels. Separate input and output terminals are provided.

OPEN ARCHITECTURE

Two plug-in extension slots on the rear panels of both VCRs accept optional expansion boards. To build a PC-based edit system, add the SA-K27UA (RS-232C) board. To use with RS-422-based edit controllers, plug in the SA-K26U (RS-422) card. Other boards include the SA-N50U DNR board with time base stabilizer, and the SA-R50U VITC/LTC time code generator/reader.

RM-G800U EDIT CONTROLLER

- Features automatic assemble and insert editing, audio insert editing, as well as preview/review for checking edits before and after editing, and go to for direct access to any edit point. A capstan bump function is provided to assure greater edit consistency.
- Has two GPIs allowing automatic triggering of special effects generators, switches or audio mixers.
- 8-digit LED counter indicates all edit data in either the TC or CTL mode. Switchable between player and recorder.
- Precise and responsive jog wheel makes it easy to locate any frame and can also be used to enter and trim edit points.

NEW! RM-G805U A/B ROLL EDIT CONTROLLER



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Panasonic WJ-MX50 Digital A/V Mixer

- Four input switcher and any two sources can be routed to the program buses
- Two-channel digital frame synchronization permits special effects in each A/B bus
- Combination of 7 basic patterns and other effects creates 287 wipe patterns
- External edit control input for RS-232C or RS-422 serial controls. Also has GPI input
- Wipe boundary effects: soft/border (bold, eight background colors available)
- Digital effects: strobe, still, mosaic, negative/positive, paint, monochrome, strobe, trail, and AV synchro
- Real-time compression - entire source image is compressed inside a wipe pattern

- "Scene Grabber" moves a pattern, upholding the initially trimmed-in picture integrity
- Fade-in and fade-out video, audio, titles individually or synchronously faded
- Down stream keyer with selectable sources from character generator or external camera
- Eight memories for instant recall of frequently used effects
- 8 preset effects include: Mosaic Mix, Position Stream, Corkscrew, Bounce, Flip, Shutter, Vibrate, and Satellite
- Audio mixing capability of 5 sources with 5 audio level adjustments



In the past if you wanted to isolate selected objects in a video sequence for compositing with other video sequences you had two choices. Either you rented a studio and shot hired talent in front of a blue screen or you masked each individual frame by painting over the area that you wanted to protect or cut out. Now wouldn't it be great if there was a tool that automated the process for you—right from your desktop?



AutoMedia AutoMasker The World's Only Automated Video-Object Masking Tool

AutoMasker is the world's only automated software tool for accurate isolation of items and figures in a video clip. Using intelligent tools that quickly mark the border of an object in a key frame, AutoMasker determines the exact border in subsequent frames even when the object is multi-colored, changing its geometry or moving over a colorful and dynamic background.

Using innovative break-through technology, AutoMasker enables automated masking, isolation, painting, extracting and insertion of selected objects into video streams at a fraction of the cost incurred using the conventional frame-by-frame painting method. Selected objects can be modified within AutoMasker or in combination with other digital video special effects or compositing software. AutoMasker is very flexible and works on just about any platform - SGI, Windows 95 and NT4.0. It works with standard file formats including: TGA, BMP, QuickTime and AVI. The tools are powerful enough to work, accurately, even on fields for precise masking results.

- Greatly increases masking productivity
- Automates masking of video objects even when they are multi-colored, changing their geometry and moving over colorful and dynamic backgrounds
- Easy object selection in first frame and exact boundary tracing in subsequent frames
- Easy modification to object border and controlled anti-aliasing
- Independent automatic object and background color effects

- Simultaneous masking of a number of objects and objects with holes
- Create mask or colored output movie, including optional alpha channel
- Compatible with most file formats including TGA, VDA, ICB, VST, AVI, FLV, PDS, DCM
- Results can be used with most third-party applications.



Post-Production System on a Single PCI Card

Based on Pinnacle's EMMY award-winning special effects technology, GeniePlus is a complete desktop post-production system that includes a 3-D DVE, switcher, advanced character generator, fast still-store and a dynamic paint system - at a price you can afford. Equipped with an incredible array of features on a single PCI card, GeniePlus lets you create your own stunning effects, including page turns, water ripples and spheres with uncompromised 4:2:2 internal digital quality. The full-function 3-D DVE provides ultra-smooth motion and no breakup (pixelation) when pictures are sized or rotated. You'll be able to create exciting warp effects with lighting, trails, shadows and borders faster and more easily than ever before.

Switcher/DVE:

- Designed to make your A/B roll editing effortless, the GeniePlus switcher has two live inputs (with built-in frame synchronizers), two full-color frame buffers for use as still-stores, and built-in matte and black generators. Internal linear keying allows multiple layers to be created in a single pass, and Pinnacle's unique Genie Wipes and Alpha Wipes create visually stunning effects.
- Over one hundred effects and transitions that can be customized to instantly add spark and style. These include single-pass page turns, warps, ripples, spheres, trails, shadows and a wide variety of borders. You also have control over lighting and virtually all the controls can be keyframed. Create incredible moves and even use keyframes to have an object track an element on your screen.
- Full spectrum chroma keying with amazing quality. Quickly choose the exact color you want to key out.
- Add warp shapes to the foreground image and deliver high end quality never before available at such a low price point. New warp shapes including hourglass, hexagon, balloon, diamond, octagon, and bumps.
- Need a glint to float across the screen or title? How about a spot light to enhance the scene? Maybe you need to darken all but a certain part of the screen to point out an element? They are all yours with the new Manual Highlights controls.

Paint:

- Includes the same excellent paint program that ships with Pinnacle's Alladin. It works at DI resolution (720 x 486) and comes with tools optimized for video graphics. Includes a de-flicker filter and also lets you batch convert a sequence of graphics files from different formats and scale them for video use. A pixel interpolation algorithm smooths the enlarged pixels and anti-aliased lines without causing excessive blurring.
- Cursor is invisible. As a result, brush strokes look like animations, and may be used for example to illustrate sports moves, show an itinerary over a map or illustrate weather reports.
- A text buffer lets you use text in a variety of ways. Any font available to Windows can be used for Paint, and text may be scaled, rotated, etc. Effects like shadows and outlines are easily applied and there are many options for the color of the text.

Character Generator:

- GeniePlus comes bundled with Inscribe CG, the standard for character generation. Inscribe supports multiple fonts (TrueType or PostScript), a great variety of text styles, geometric objects, various backgrounds, and different color combinations.
- Styles include a combination of settings such as emboss, glow, shadow, outline, gradient, and transparency.
- Import regular ASCII text files. Adjust text to the screen with automatic horizontal and vertical centering tools. Lines can be automatically aligned, aligned to the right or left, or placed anywhere on screen. Logos can be imported and placed at will, and backgrounds can be comprised of graphics files, solid colors, gradients or live video.
- Variable speed rolls and crawls are possible. The pages are set in Inscribe, and GeniePlus handles the smooth motion. CG pages can be used directly from Inscribe or saved to be used by the DVE. Foreign language special characters are also available.

Other Features:

- Compatible with Windows 95 and Windows NT 4.0.
- Includes GPI control for integration with stand-alone editors. And since most PC-based editing systems offer a direct interface to seamlessly control GeniePlus, you'll can focus on your production, instead of your tools.
- Has connections for six video inputs—three composite and three S-Video—two of which may be switched at a time. (Accepts NTSC or PAL signals.) S-Video and composite sources can be mixed. There is also an external sync input with loopthrough. The board processes video in true broadcast quality, conforming to CCIR 601 standards.

TURNKEY GENIEPLUS COMPUTER SYSTEM

- INCLUDES: • Pentium 166 MHz CPU • 220 Watt 6-Bay Midtower Case • 3.5" Floppy Drive • 32 MB RAM • 256K Cache RAM • Diamond Stealth64 2MB 32-bit VGA Display Card • Seagate Medalist 2.5 GB IDE Hard Drive • Creative Labs Soundblaster 16 Audio Card • Altex Lansing ACS-51 Amplified Computer Speaker System • Teac 8X-50 Internal IDE CD-ROM Drive • Focus 2001A Keyboard • Logitech 2-button Mouse • Windows 95 • Princeton E015 High Resolution 15-inch Monitor plus—card and software installed\$6795.00



TARGA 1000/2000

PCI Video Capture Boards for Windows and Macintosh

The TARGA 1000 and 2000 are an easy and affordable way to transform your computer into a powerful digital editing system. Along with their high-speed PCI interface, both the TARGA 1000/2000 incorporate all you need to create spectacular multimedia content. They support NTSC and PAL standards and let you capture, edit and playback full-motion, full-resolution digital video with fully synchronized CD-quality audio. Designed for high performance PCs they deliver incredible processing speed for video and audio effects, titling and compositing.

TARGA 1000/2000 PCI for Mac provides a flexible "plug-and-play" solution for video authoring, 3D animation and multimedia applications. Work on animation projects with software like Strata Studio Pro or Specular Infront-D or video or CD-ROM authoring with Adobe Premiere and After Effects 3.0.



Advanced DVR (Digital Video Recording) Technology:

The TARGA 1000/2000 employ advanced DVR technology to deliver superior video performance. Unlike other systems that treat each frame of video as a block of data tied to a specific order of steps such as decompression-resize-compress-write to disk, DVR writes an entire frame of uncompressed video to the huge on-board 20 MB RAM buffer of the TARGA 2000 (8 MB RAM buffer of the 1000). This is a "memory-centric" approach, in which all board functions share access to the video buffer. For example, a DSP (digital signal processing) chip can perform additional data, such as matching audio samples to video frames to help maintain lip sync. Transitions, filters, effects and/or resizing can also be applied

while the uncompressed frame is in TARGA memory. The final output is then compressed and written to disk. Video data only crosses the bus twice—both times in compressed form. On other systems, the video data path is longer and more complicated. Video crosses the bus twice uncompressed and twice compressed. The DVR architecture can access information in its memory buffer at a speed of 230MB per second. Video runs only at 2 to 7 MB per second, so the TARGA boards have all the time needed to decide what to do with each frame. And because uncompressed data is never sent across the bus, bottlenecks that plague other systems are eliminated.

TARGA 1000/2000 Features:

- Record and playback video directly to/from hard drive at 50 fields/sec - PAL, 60 fields/sec-NTSC. Video is stored and played back at the highest resolution for each format (768 x 576 - PAL, 640 x 480 -NTSC). Compression can be adjusted on the fly to optimize for image quality and/or minimum storage space.
- Audio is digitized at 44.1KHz or 48KHz sampling rates, for professional quality stereo sound. Since all audio and video processing is done by on-board DSPs, you are assured of perfectly synchronized sound and images.
- Equipped with composite and S-video inputs/outputs. Also available with component input/output (TARGA 1000 PRO).
- Genlock using separate sync input for working in professional video suites
- Optimized to work with Windows NT-based software (Adobe Premiere 4.2, iSync Speed-Razor MACH III)
- Macintosh version only:
- Video capture plug-in for Adobe Photoshop.
- Quicktime 2.1 compatible, can be used directly out of the box with many applications.

TARGA 2000 Additional Features:

- Accelerated Windows 3.11 and Windows NT 4.0 display drivers offer integrated, true-color (24-bit), non-interlaced desktop up to 1152 x 870 pixels.
- View your desktop and video-in-a-window on your non-interlaced monitor while the processed video is output at NTSC or PAL to a video monitor and/or a VCR.
- Provides a large work area for displaying video, as well as editing application controls. Any part of the display (or even the whole image) can be recorded to tape (video-out-of-a-window).
- Equipped with composite and S-video inputs/outputs. Also available with component input/output (TARGA 2000 PRO)

TARGA 1000 for Windows or Macintosh PCI (specify).....	1499.00
TARGA 1000 PRO (Component input/output) for Windows or Macintosh PCI (specify).....	1799.00
TARGA 2000 for Windows or Macintosh PCI (specify).....	2899.00
TARGA 2000 PRO (Component input/output) for Windows or Macintosh PCI (specify).....	3299.00

TARGA and DPS Windows NT Turnkey Systems:

- 220-watt, 6-bay midtower case
- PCI motherboard with 512K pipelined burst cache
- Pentium 166 MHz processor
- Diamond Stealth 3D 3400X1.4 MB VRAM PCI display card (Systems with in:sync Speed-Razor MACH 3.5 receive a 9FX Motion 771 4MB VRAM PCI display card)
- 32MB of EDO (Extended Data Out) RAM (Premiere systems only)
- 64MB of EDO RAM (Speed Razor systems only)
- Quantum Fireball 2.5GB IDE system drive
- Seagate (Barracuda) 4.2GB SCSI-3 Ultra Wide hard drive
- Adaptec AHA-2940UW Ultra Wide SCSI-3 controller card
- MediaTRIX AudioTRIX Pro DSP-equipped 16-bit audio card (for DPS Perception systems only)
- Teac CD-512e 12X EIDE internal CD-ROM drive • 3.5" floppy drive
- Altex-Lansing 300.1 three-piece deluxe speaker system
- Princeton Ultra 17+ high resolution 17-inch multiscan monitor
- Focus 2001A keyboard • Microsoft MS mouse • Windows NT 4.0 operating system software

TARGA 1000/Adobe Premiere 4.2.....	\$5995	TARGA 2000/ Adobe Premiere 4.2.....	\$7795
TARGA 1000 PRO/Adobe Premiere 4.2.....	\$6295	TARGA 2000 PRO/Adobe Premiere 4.2.....	\$8195

- *PVR-2500/AD-2500 w/Adobe Premiere 4.2.....\$6995
- *PVR-2500/AD-2500 w/in:sync Speed-Razor.....\$7995
- *PVR-2500 System Notes: 1) Does not include Adaptec SCSI-2 controller card (has built-in SCSI-2 port)
- 2) Includes Seagate Barracuda 4.2GB Narrow hard drive (doesn't accept Wide drives)

Expansions and Upgrades for all Systems:

Full Tower Case (10-bay).....	add 100.00	Super Tower Case (12-bay).....	add 200.00
Pentium Pro 200 MHz processor (256K cache) and Pro motherboard.....	add 750.00	With 512K cache.....	add 1200.00
Dual Pentium Pro 200 MHz processor (256K cache each) and dual Pro motherboard.....	add 2000.00		
Seagate Barracuda 9.1GB Ultra Narrow (for DPS).....	add 800.00	Seagate Barracuda 9.1GB Ultra Wide drive.....	add 900.00

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18.2GB Raid Array (Single channel with two 9.1GB Ultra-Wide Drives).....	4995.00
8.4GB Raid Array (Dual channel with two 4.2 GB Ultra-Wide Drives—one drive per channel).....	3295.00
18.2GB Raid Array (Dual channel with two 9.1GB Ultra-Wide Drives—one drive per channel).....	5295.00
16.8GB Raid Array (Dual channel with four 4.2 Ultra-Wide Drives—two drives per channel).....	5695.00

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DIGITAL PROCESSING SYSTEMS INC.

PVR-2500 'Perception'

Digital Video Recorder The Heart of an Advanced Digital Audio/Video Workstation

The PVR-2500 offers powerful features for awesome animation, morphing and retouching capabilities. With features like 720 x 480 resolution, 10-bit 2x oversampled video encoding, better than D1 scaling, component and S-Video outputs, multi-processor support and integrated FAST SCSI-2 controller, it empowers your computer to rival the finest professional production studios.

- The PVR-2500 is a full-length PCI card with a FAST SCSI-2 controller. Because the SCSI controller is integrated with the PVR-2500, video data never has to go over the PCI bus during playback. This avoids the bottlenecks found in systems which use the computer's hard drive for video storage.
- Exclusive multi-format virtual file system ensures complete integration with your application. Any acquired video or computer generated Perception video clips appear simultaneously in many different file formats including TARGA, SGI, BMP and IFF.
- Compatible with LightWave 3D, Softimage, 3D Studio MAX and others. Perception also comes bundled with DPS Lockstep software to provide significant control over 3D Studio MAX.
- 10-bit 2x oversampled encoding for 720 x 480 broadcast quality resolution. Dynamic range is in excess of D1 scaling so images are brighter, have more color and greater spatial resolution than ever before. Component, composite and S-Video outputs are provided via the included breakout cables.

- Runs under Windows NT 4.0 on computers with Pentium, DEC Alpha or MIPS processors. Perception utilizes NT's native support for multitasking and multiple processors, allowing use with the most powerful computers.
- Perception performs real-time interpolation of 30 fps video to 24 fps film rates or vice versa. This means that it is also at home on the Hollywood movie set as well.
- VCR-like controls on the Perception's GUI simplifies the task of batch digitizing and recording. In this mode, the PVR-2500 can read SMPTE time code from the source deck.
- Use with Windows NT compatible sound card while synchronization of audio and video is maintained by the PVR software.
- Use with third party editing software such as Adobe Premiere or iSync Speed Razor MACH 3.5. A system equipped with the PVR-2500, AD-2500 capture card, a sound card, editing software and one or more SCSI drives becomes a non-linear editor of unparalleled performance - at an unbeatable price.

AD-2500 Component Video Capture Card
Coupled with the AD-2500 live video capture daughter card, the PVR-2500 becomes a broadcast-quality digital recorder delivering unsurpassed picture quality.

- Has component, composite and S-Video inputs for real-time recording. Captured video can also be exported as sequential RGB files for retouching and other compositing applications.
- Sophisticated automatic entropy prediction circuit analyzes incoming video and dynamically calculates the optimum amount of compression on a field-by-field basis—even during real-time recording. You also have complete manual control over compression level/quality settings.

DPS SPARK
Spark is a DV editing system designed exclusively for use with DV camcorders and VCRs. An affordable direct DV editing solution, all you need to edit DV is a properly equipped computer and a DV camcorder. Digital audio and video are transferred from your camcorder to your hard drive in real time, using the FireWire cable. Non-linear editing on the computer is facilitated with a full version of Adobe Premiere 4.2 editing software which is optionally included. Once content is edited, simply transfer back to your DV camcorder using the bi-directional fire wire cable. Since the video signal remains digital from start to finish, there is no generation loss for a finished product which rivals Betacam SP at a fraction of the price!

DV2000U "SPARK" DV Board \$99.95
DV2000 "SPARK" DV Board With Full Version Adobe Premiere 4.2 \$49.95



NEWTEK LIGHTWAVE 3D 5.5

3D Animation Software

Explosive ideas that test the boundaries of 3D animation deserve a program that can realize them in exciting new ways. Creating worlds that no one's ever seen. Creatures that have never walked the Earth. Special effects, games, web sites - all creations that exist only in your mind. Until now.

LightWave 3D gives you an easy way to create the most sophisticated 3D animation imaginable, with formidable capabilities from an incredibly powerful, professional animation system. Its intuitive, complete, easy-to-use layout and modeling system delivers the ultimate in creative control, not to mention flexibility - the likes of which you've never seen. And unparalleled features for modeling - surfacing, lighting and animating are right at your fingertips. LightWave 3D packs a wallop of a punch. Raytracing, motion blur, MetaMotion, inverse kinematics (IK), Bones, field rendering, lens flares, compositing - they're all here. LightWave 3D's OpenGL and QuickDraw 3D support mean you can see your creations in real time.

What's more NewTek improved LightWave 3D's anti-aliasing quality by 300 percent over earlier versions they also improved the accuracy of IK, and increased speed by 500 percent. Its robust

plug-in architecture means you can choose feature options that match the way you work. And it's exceptional image quality and throughput make LightWave 3D an ideal choice for special effects in television, film, commercial work, web page development, graphic arts, video games and education.

With all of this it's no wonder you can find LightWave 3D in more Hollywood animation suites than any other 3D program. Yet you can get all of LightWave 3D's great features and exceptional performance for a price far more affordable than you dreamed possible. In fact, LightWave 3D costs up to 75 percent less than comparable programs.

It's no use having a great program if you can't run it. So LightWave 3D is available for all of the most popular platforms: Windows 95, Windows NT, Power Macintosh, DEC Alpha, SGI, and Sun Microsystems.

Throw in over 40,000 loyal artists who share what they know, and you won't be able to wait to get your hands on LightWave 3D. After all, by giving many 3D designers their start, and moving them from the garage to their own special effects companies, LightWave 3D has changed people's lives.

Open GL Support

- OpenGL or QuickDraw3D supports real-time shaded views and displays many surface attributes. Preview objects as solid or see-through wire frames in the OpenGL preview window.

MetaNURBS

- High-speed meta modeling for mind-boggling creations. LightWave's unique MetaNURBS is an elegant and easy way to model objects by transforming polygonal models to NURBS surfaces in real time. MetaNURBS delivers incredible detail and flexibility, so you can create smooth organic objects even though the model is actually based on polygonal geometry. Modelers who switch seamlessly between polygonal modeling and the organic power of NURBS for the best of both worlds.
- Drag and Drop Scale - designed to help you work with organic models. Both are especially great for MetaNURBS. Objects plus the new extender plug-in gives you added control over the objects you create with MetaNURBS.
- Also incorporates traditional spline-based modeling tools. (Brezier and hand drawn curves automatically converted to polygon surfaces). The spline modeler lets you create any shape you can dream up in incredible detail and lets you endlessly modify your creations - there's nothing you can't create.

Boolean Tools

- Boolean tools to cut, slice and combine objects. With LightWave's Boolean tool, things take shape fast. The Boolean principle is simple. Add. Subtract. Intersect. Take simple primitives, like spheres or cubes, and create complex shapes quickly and effortlessly.

Other Features

- 3DMF Support on PowerMac
- MetaBalls modeling plug-in - New MetaForm2 plug-in
- Surface editing directly in modeler
- Graphics tablet support standard
- Randomization for bevel and array tools
- Two way data sharing between layout and modeler
- Dramatically increased graphic redraw speed
- Easy-to-use lasso style zoom
- Hundreds of polygon modeling tools, including extrude, lathe, level, mirror, clone, quantize, jitter and subdivide
- Postscript and TrueType font compatibility
- Draw freeshapes shapes or trace over images
- Work among ten different layers
- Multiple view options
- Macros to automate complex functions
- Multiple levels of undo and redo
- Automatic standards - design in metric, English or SI measurement units
- Mathematical functions can be typed directly into numeric requesters
- Translator loaders/savers for these formats: 3D Studio, AutoCad (DXF and Alias/Wavefront (OBJ).

Adobe After Effects 3.0

Post-Production Tool for Compositing, Motion Graphics and Special Effects on the Macintosh

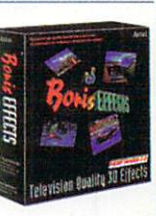
After Effects combines a powerful interface with high-quality output, giving you the ability to create sophisticated motion graphics on the desktop. Produce on-air promos and bumpers, commercials and music videos, animated titles and complex special effects—with the control, flexibility and savings the Macintosh provides.



Artel Boris Effects 2.2

A software-based multi-channel DVE generator, complete with intraframe interpolation, matte manipulation, and multiple keyframes, Boris Effects allows you to create your own custom moves. Boris ships with a keyframe library of over 150 customizable effects including cubes, picture-in-picture, chroma keying, tilting, soft edges, masks, filters and compositing of unlimited track of video and graphics. Effects can be saved or used with different video sources. Easily create 3D flying logo effects from PICT, TIFF, bitmap, Video for Windows and QuickTime files using an embedded alpha channel. Other features include borders and drop shadows which can be colorized and made soft and translucent, control over camera position and light source with specular highlights. Based on a plug-in architecture, Boris is compatible and closely integrates into Adobe Premiere and After Effects, Media 100, Avid MCXpress, iSync Speed Razor, FAST VM-Studio Plus and D-Video Online desktop non-linear editing systems. Once installed in your system, it appears in the transition list and is easily accessed from their transitions and filters menu. It is not a background application and no extra memory is required.

- Up to 65,000 tracks of video and graphics.
- Blur and bevel filters.
- Full control of image scale (size), positioning, depth and opacity.
- New 3D effects with depth control to create cubes or slabs with up to 6 different videos, pictures or colors on each of the 6 faces.
- Full manipulation of pict files with alpha channels to create logo fly-by or titling. Drop shadows with variable positioning, opacity, softness, color and distance.
- New camera and lighting track. Add keyframeable specular and ambient light to your effect.
- New cropping features with full softness control of the edges and blend for really smooth soft wipe type of effects.
- Variable pivot points for any rotation control.
- Uses sub-pixel interpolation, field rendering and anti-aliasing for clean and smooth effects.
- Includes a free year of upgrades and full tech support!



ANTEX StudioCard

4-Channel Digital Audio Card for Windows

The next generation in digital audio for the desktop, StudioCard is a premium-quality digital audio adapter with advanced features, Studio-quality specs and professional connections. Unmatched in quality, flexibility and expandability, it features 4 tracks of audio sampling and real-time digital mixing capability making it the ideal board for musicians who want digital multitracking and mixing on their PC, or producers looking for a versatile board for post-production digital audio editing and uncompromised audio quality. StudioCard is Windows 95 plug and play compatible plus includes drivers for Windows NT as well.

- Key to StudioCard's amazing sound is the marriage of a low noise analog I/O section and high quality A/D and D/A converters. A PCI-based 32-bit memory mapped board, it delivers less than 0.003% total harmonic distortion and 92dB dynamic range. Plus, a PLL-based sample clock generator that can be locked to an assortment of clock sources.
- Incorporates a programmable 32-bit 40 MHz DSP and pro connections like 4 independent balanced analog I/Os (4x50 or 10 dBV) and AES/EBU or S/PDIF digital I/O. It also offers a MIDI port with deep buffers and time stamping. No matter which type of equipment you have StudioCard will integrate into standard studio environments.



SPEED RAZOR MACH 3.5

Digital Video Editor for Windows NT

The ultimate digital video editing software. Speed-Razor MACH 3.5 edits full screen, 60 fields per second, CCIR 601 broadcast-quality video. Designed for the DPS PVR-2500 and Truevision TARGA series video capture cards, Speed-Razor MACH 3.5 is the fastest and most powerful tool for editing and compositing video clips, animations, stills, music and sound effects.

Speed-Razor features infinite video, audio, transition and effects tracks and comes with Razor Blades—transitions and effects to enhance your production. There are preset tumblers, fades and wipes which you can easily customize and save as new presets. In addition, there are special image effects which are unquestionably the highest quality of any system—analog or digital. Speed-Razor sports anti-aliased 3D DVEs, an infinite channel chroma keyer and an excellent character generator. Use the included effects or transitions, layer them to create new ones, make your own grayscale bitmaps to use as transitions, or use 3rd party plug-in effects—the flexibility is yours.

There are two user definable resolution modes (thumbnail and final) to facilitate editing. The thumbnail mode allows you to use Speed Razor in the field on a laptop then transfer the project file back at the edit suite and automatically recapture and re-render the entire project at final resolution.

RS-422 control and batch capture module allow you to automate video capture via SMPTE time code, so digitizing video and audio is simple and painless. In fact, with the innovative "Virtual Editing" function you can actually edit your project, complete with effects and transitions—before you've digitized a single frame of video.

- COMPOSITING:**
- Infinite number of layers of video clips, still and animations can be composited together
 - Handles any resolution from Betacam (720 X 480) up to Omnimax film (4000 X 4000)
 - Video clips can be combined using an alpha channel, key color transparency, still or traveling mattes
- FILE FORMATS:**
- Reads and writes ANI files (created by DPS' PAR), PVD files (Perception), DVM files (TARGA 1000 and 2000) and sequences of TARGA files
 - Convert files between any of the following formats: ANI, PVD, DVM, AVI, BMP, TGA, FLC, FLI, WAV
 - Project-based Library for organizing your work
- AUDIO:**
- Handles audio up to DAT (48 kHz) quality
 - Infinite number of audio tracks for multi-layer audio mixing

- EFFECTS:**
- Blur (circular, gaussian, fast), tint, brightness adjustment, chroma key, crop, displacement, emboss, freeze frame, glass texture, grayscale, invert, loop, matte, pixelate, repeat fields, scale, transparency, strobe, turn red/green/blue
 - 3D DVE (translates and/or rotates an image in three dimensions on the X, Y and Z axis)
 - Sets a color channel to an assignable value
 - Titles (full blown CG using any Windows font in any color with automatic drop shadow)
 - Sub-pixel rendering for incredibly smooth motion
 - Effects can be applied to infinite sources
- TRANSITIONS:**
- Includes over 100 grayscale image transitions, crossfades, luminance fades, fade to/from black, fade to/from white, push, twist, twist into/out tumblers, flip, turn, scale (zoom)
 - Transitions can be applied between infinite inputs

inSync Speed Razor MACH 3.5 for DPS PVR-2500 and Truevision TARGA Series.....CALL

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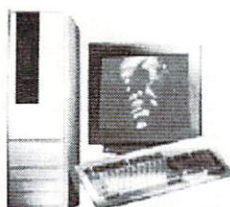
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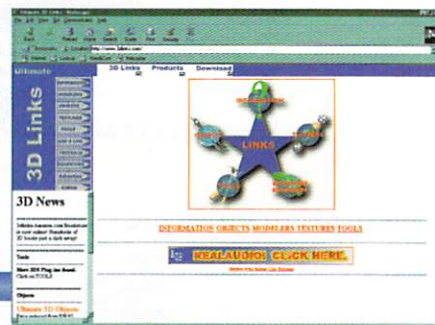
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Surf Report

A ROUNDUP OF ONLINE RESOURCE SITES

The Ultimate 3D Links site is a well-organized guide to all things 3D.



ASSEMBLED BY GEOFFREY WILLIAMS

All sites were active at the time of this writing, but sites come and go with great frequency. Check out the **Surf Report Web site** for direct links and updates for all of these areas. If you know a Web site that you think should be included in the Surf Report, please email the URL to cbp@cris.com.

NEWTEK:

www.newtek.com

This is the place to go for the latest NewTek news, LightWave 3D tutorials, updates, and other useful information.

SURF REPORT ONLINE:

www.cris.com/~cbp/surf_report.htm

You might not want to type in these sites, so jump on over to my list to access these sites online and use it to point and click to sites you want to explore.

NEWTEKNIQUES:

www.studiovisions.com/newtekniques

This is Joe Tracy's *NewTekniques* Web site that contains news, information, updates, contests, and behind-the-scenes information pertinent to *NewTekniques* readers.

USENET NEWSGROUPS

rec.video.desktop.toaster
comp.graphics.apps.lightwave

MAILING LISTS

LightWave Mailing List: Join by emailing listserv@listserv.rc.arizona.edu and in the body of the message type SUBSCRIBE LIGHTWAVE.

Toaster/Flyer Mailing List: Join by emailing listserv@listserv.rc.arizona.edu and in the body of the message type SUBSCRIBE TOASTER.

GATEWAY 2000 NEWS

By now you know that Gateway 2000 has purchased the Amiga. Here are some sites to get more information about this new attempt to breathe life into the computer that refuses to die:

Amiga Report: www.cucug.org/ar/ar-gateway_Sections/main.HTML

This special issue is devoted to the acquisition of Amiga Technologies by Gateway 2000. It includes commentary and news.

Press Conference:
www.cucug.org/at/at970516.html

A transcript of the remarks by Petro Tyschtschenko at the May 16 press conference in London.

Industry Council Open Amiga
www.znet.com/~colin/icoa/

A group of Amiga developers and businesses that have come together to create channels of clear communication with Gateway 2000 and to encourage the opening up of Amiga technology. This site is a good source of information about what is really going on and how it affects future development.

NEW LINKS OF INTEREST

Video Toaster Group: www.vgn.com/tvtg.html

This has long been a happening Los Angeles-based Toaster support group, and they finally have a presence on the Internet.

The Trading Zone:
www.pacificone.com/trader/amiga.html

Nervous about not having a backup Amiga to plug your Toaster in if your Amiga fails? Here's a list of folks who have Amigas and other related items for sale.

Graphics Software Archive:
wuarchive.wustl.edu/graphics/graphics/

With categories ranging from astronomy graphics to 3D packages, this archive helps you find almost any type of graphics software you might need, along with archived mailing lists and newsgroups, and frequently asked questions.

NewTek Expo 1997: www.newtekexpo.com
Here's the place to get all the latest information on the upcoming NewTek Expo 1997. It features the latest Expo news, exhibitors, award entry information, and schedule of events. NewTek Expo 1997 is October 19-22 at the Universal City Hilton, a block away from Universal Studios in California.

LIGHTWAVE 3D SITES

Ultimate 3D Links: www.3dlinks.com/

If you are looking for links to 3D sites, this well-organized site will guide you to exactly what you are looking for in a huge collection of fully described links, from utilities and textures to general information. Highly recommended.

Plug-ins for LightWave:
www.cadvision.com/ewertb/LW_Plugins.html
This site has almost a dozen freely downloadable original plug-ins written by Bryan Ewert.

Pontari Productions:
www.serv.net/pontari/lightwave/index.html
The makers of the Super Glow LightWave plug-in offer a collection of several free original plug-ins.

Paradigm Productions:
www.2dimes.com/3d.htm
A collection of around 100 original downloadable LightWave objects as well as some tutorials.

Pixel Systems:

datausa.com/pixelsys/plugins.htm
A great collection of downloadable plug-in loaders and savers that give you improvements over HILP. Includes YUV, JPG, SGI, TIF, PSD, RLA, Targa, PNG, BMP, Sun, Alias, Pict, PCX, and Cineon digital film format.

3D Ring Home Page:
www.geocities.com/SoHo/2934/3dring.htm
A virtual tour of 3D art Web pages, participants add their sites to the 3D ring main page and then visitors can jump to the next and previous sites from their page. A good way to find other 3D artists and see what others are doing.

LightWave Homepage:
www.cnj.digex.net/~rent/dak/lwirc
This is the official homepage for IRC's #LightWave for the discussion of LightWave, related software, and tips. It includes participants' names with samples of their work, their personal photos, and links to their home pages.

REVISITED

The Breakfast Club (Ryan C. Johnson):
www.newrule.com/breakfast.html
Ryan continues to keep this site timely with new information. LightWave tutorials, an article by Joe Tracy on finding information in VTU back issues, and lots of other good stuff make this site well worth another visit.

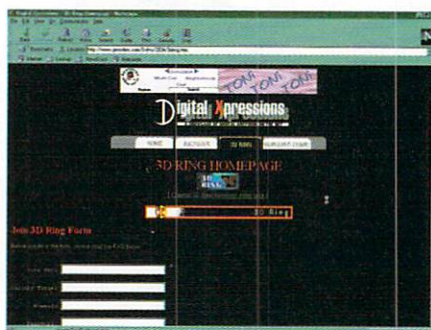
The Amiga Web Directory: www.cucug.org/amiga.html This is still the best place for massive amounts of timely Amiga information and news.

Bman's Graphics Tips and Tutorials (Brenden Meclary):
www.geocities.com/CapitolHill/1979/
Brenden has added a nifty downloadable LightWave plug-in that he wrote to help create antialiased sprites for games.

LightWave 3D Internet Users Gallery (Chris Nelson): www.razors-edge.com/lw3d/
This site continues to offer a gallery for LightWave artists; note the new address.

WIPEOUTS

Other than the Metamotion Tutorial and Imagination Systems, everyone from last issue is still online.



The 3D Ring home page leads you off into a virtual tour of 3D art Web pages.

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"RENDER GUARDIAN" by Willie Lloyd,
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10. Your computer does not have vocal recognition or artificial intelligence hardware, yet it pleads with you to give up your profession.
9. You think INTER-LACED DISPLAYS are frilly garments seen in Victoria's Secret windows.
8. The frequent Client suicides in your animation viewing suite.
7. You can't figure out why your dongle doesn't have cream filling.
6. When you design custom 3D objects you're only accurate within 358 degrees.
5. You apply complex texture maps to objects with wallpaper paste.
4. Your last customer figured out a way to wrap fish with your demo reel.
3. The FCC passes regulations that restrict television stations from broadcasting any programs containing YOUR animations.
2. Whenever you call to request reference letters from past customers, they begin to curse in ancient Latin languages, causing your phone to levitate.
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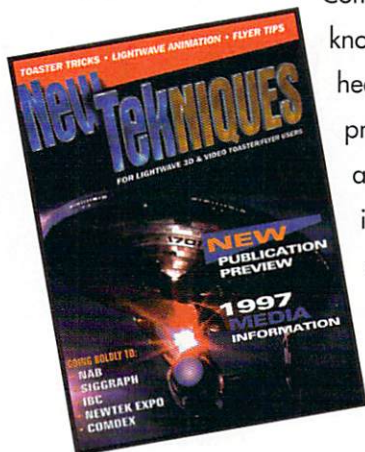
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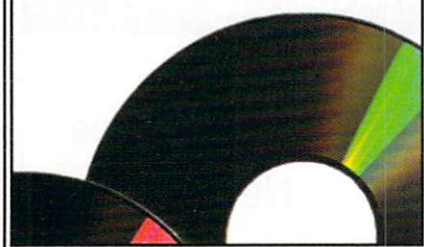
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MOJO

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The Backlash Hits 'CGI Sucks'

This quaint little phrase has been spreading through Hollywood faster than Heidi Fleiss' former employees. It seems as if there's a backlash against CGI these days and I've been scratching my head trying to figure out why. Here's an excerpt from an actual conversation between a veteran visual effects supervisor and a television producer:

PRODUCER: I've been thinking we should use models for the next episode. Do you really want to do it with CGI?

FX SUP: Why do you want to use models?

PRODUCER: Because models are so much better! You have so much more freedom to move the camera with models—it's a lot more dynamic.

FX SUP: Actually, it's the other way around—you have much more freedom with the camera in computer graphics.

PRODUCER: Well, you know what I mean. I just saw the special edition of *Star Wars* and it reminded me how much better models are than CGI!

FX SUP: Actually, they re-did most of the model shots in that with computer graphics.

PRODUCER: [Long pause] Well, you know what I mean!

Yes, I do know what you mean. I finally figured it out! But to understand the uneducated thought process that leads to such a con-

clusion, we must go back a few years and look at the history of visual effects.

Ten years ago, in the heyday of models and motion control, special effects were a very, very expensive process. It took a lot of million-dollar machinery and a myriad of high-tech skills to produce even the most basic of shots. This meant that only a handful of companies were in the position to produce visual effects, resulting in a small community made up mostly of veteran artists. The "boy's club" was very small indeed, as few could gain access to the equipment needed to learn the trade.

This meant that prices were high and the process time-consuming—a combination that put special visual effects within the grasp of only the highest-budget movies and the highest-rated TV shows (read: "Star Trek"). Even so-called low-budget special effects were relatively expensive, with the often laughable results simply not worth the high price.



Quality control is the key
to better CGI....

BY MOJO

The result of all this was that only a small percentage of Hollywood's output included special effects. Of those projects, the majority of them (maybe 75 percent) could be classified as having "good" FX. So, out of 10 FX movies a year, you could count on seven of them being worth looking at. And, of the two or three effects series on the air, you could count on at least one of them getting good enough ratings to justify the cost of its production (read: "Star Trek").

As a rule, audiences were generally "only" treated to good special effects. Today, however, things have changed.

The computer graphics revolution (which started, more or less, with Foundation Imaging and "Babylon 5") heralded a new era of low-cost, high-quality visual effects. The equipment and manpower costs more than halved and the time of the production cycle also was cut to size.

After *Jurassic Park* stomped through theaters, it was almost overnight that every FX company in Hollywood sprouted a CGI department. In addition, a variety of new, smaller companies (many of them LightWave-based) started up to meet the demands of television, an industry that found itself suddenly able to afford special effects.

More FX-based movies and TV shows were being produced than ever, but with a significant difference: quality control had gone down the toilet.

What no one had seemed to realize is that all those dandy new workstations had to have a visual effects "artist" placed in front of it. Not button pushers, not programmers, not computer enthusiasts—but "artists."

Unfortunately, Hollywood simply couldn't come up with a whole lot of 10-year veterans for a two-year old industry. There wasn't the time yet for a whole lot of people to get good at it!

So, they put whoever could score well at Super Mario Brothers in front of the machines and hoped for the best.

What they got was, well, not the best. Out of, say, 25 FX movies maybe 15 are worth their salt and as for the dozen or so new FX-laden TV series, I think you can count the number of them that even "recognize" quality on one hand.

So where does this leave us? With the public being exposed to more "bad" special effects than ever before. Of course, not knowing any better, they assume that it's this new CGI thing that's to blame, so they throw the baby out with the bath water and computer graphics start to get a bad rep.

Of course, "we" know that this isn't true. "We" knew all along that it's the artist, not that machine (or even the software) that makes good visual effects.

So please, y'all—bone up on LightWave and get yer asses out here before I have to tell yet another person what CGI "really" stands for: Can't Grasp It.

Mojo is an animator with Foundation Imaging and will be master of ceremonies at the first NewTek CREATE Awards at NewTek Expo 1997.

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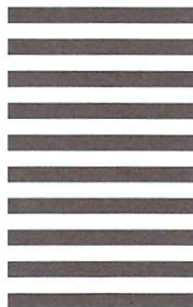
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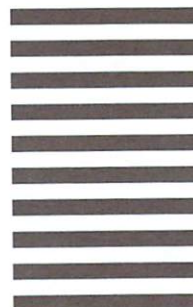
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